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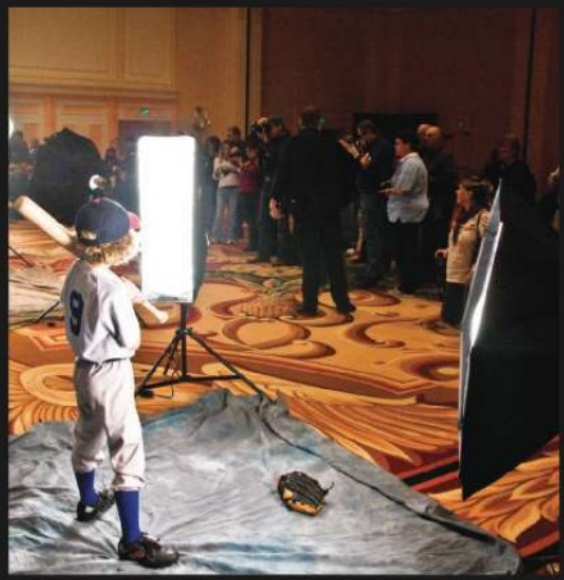

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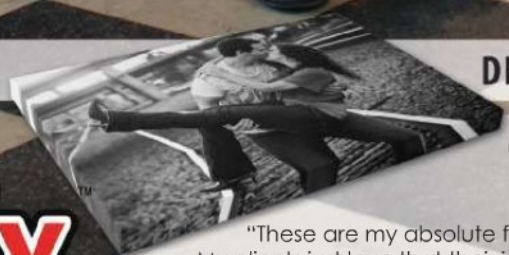

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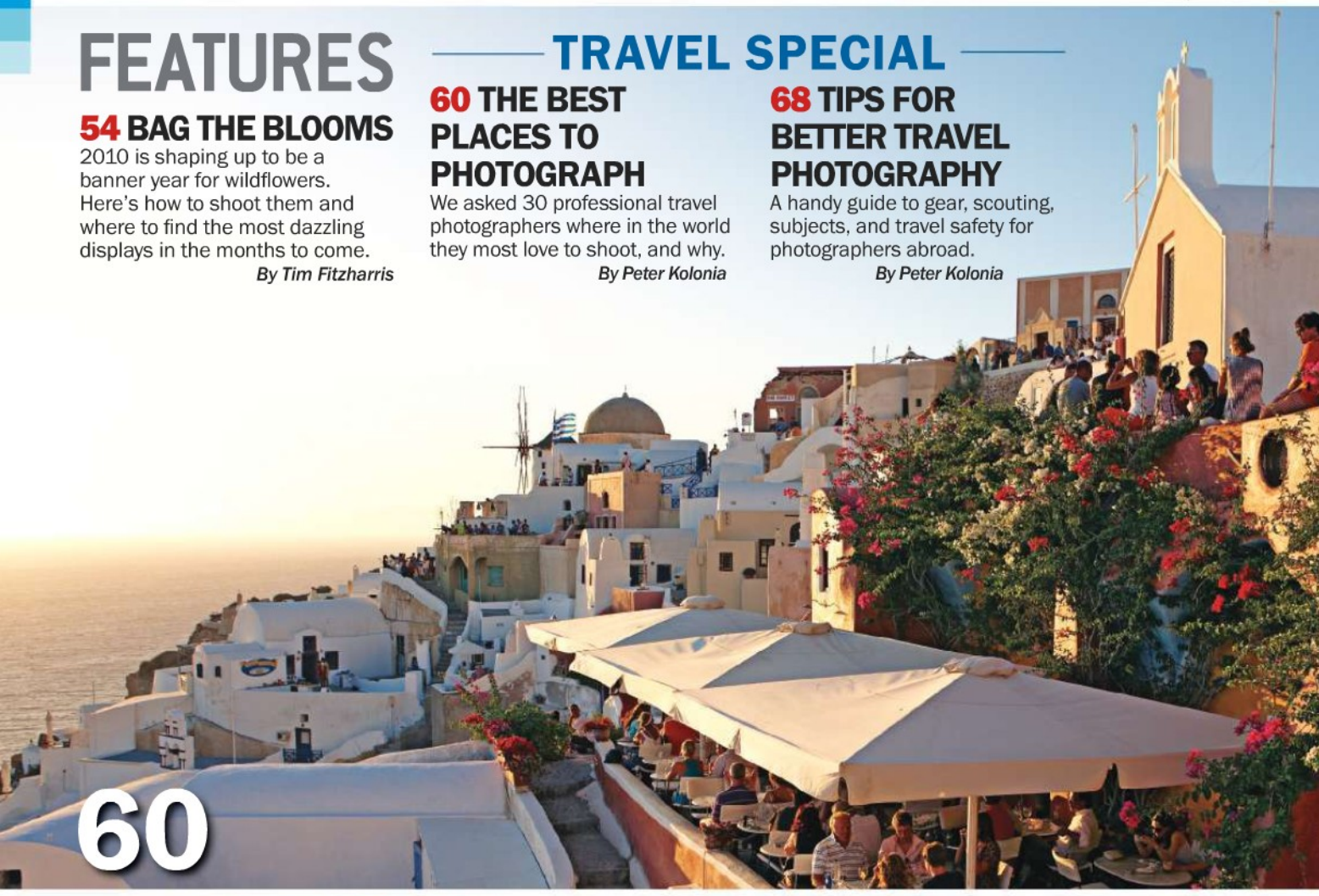
By Peter Kolonia



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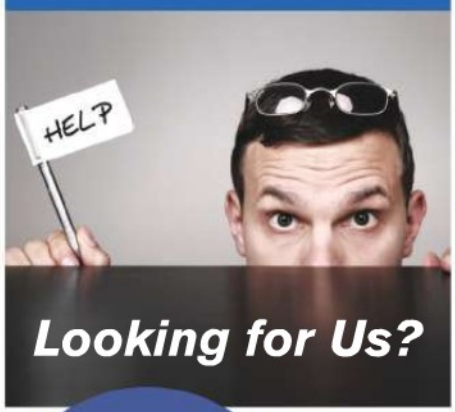

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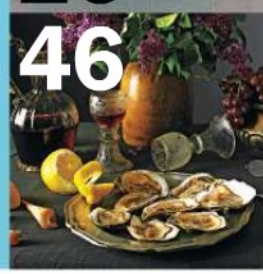

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COVERS: TONY CORDOZA (NEWSSTAND); CHRIS MCLENNAN (SUBSCRIBER). PREVIOUS PAGE: CHRIS MCLENNAN (SANTORINI); MARK SEGAL (VENICE); TIM FITZHARRIS (FLOWERS). THIS PAGE: CANON USA (CAMERA); ADAM MAGYAR (PEDESTRIAN); SKIP CAPLAN (STILL LIFE).

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Tamron 18-270 VC 15x Zoom
with Vibration Compensation

Top: shot at 18mm; Bottom: shot at 270mm from same position

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CHRIS MCLENNAN

Just pack your things and go

I'd never really thought about visiting China's Guilin prefecture—until I saw this photograph by Chris McLennan, which appears on our subscriber cover. It does everything a travel photo ought to do, giving a glimpse of a landscape and a way of life that seems entirely unlike the familiar scenes of home. I had to look at a map and find out more about this region—comprising the large outlying rural area surrounding the city of Guilin in southern China—and now I'm dreaming of having the time to see, and photograph, the area for myself.

I also had to find out more about the picture itself: McLennan, a travel and adventure photographer from New Zealand, shot it near the town of XingPing on the Li River after a commercial shoot for a tourism client in the area. "I'd hired a local guide who spoke the local dialect, and he communicated with the fisherman for me to get his approval to take the shot," he says. "I compensated him for his efforts, and he is a very happy man!"

The fisherman uses his lantern to attract fish to his bamboo raft, McLennan explains. "His trained cormorants, with clips around their necks to prevent them from swallowing the bigger fish, dive and retrieve the catch. Once the fisherman has enough to feed his family, the birds are fed."

Experiences like this are why McLennan named Guilin prefecture one of the best places in the world to photograph. He also recommends the Ping An rice terraces in Long Ji: "The never-ending lines of terraces formed by hand in the mountainside create amazing shapes, curves, and waves of light and shadow," he says.

To make the most of your visit, he advises you to plan your trip carefully, hire a local, and avoid the large towns and "tourist traps."

McLennan is one of over two dozen travel photographers we interviewed for this month's Travel Special. Turn to page 60 for their 20 favorite photo destinations and to page 68 for tips for better pictures wherever you travel.

I can't wait to get going!

Miriam Leuchter

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JUNE AUBREY R. YOUNG

REVERSE THINKING June Aubrey R. Young, an avid photographer from Quezon City, Philippines, mounted the 18–55mm kit lens backward on her Nikon D3000 using a reversing ring to get this extreme close-up of a silk moth. She made a diffuser from a KFC bucket to soften her hot-shoe flash. Exposure: 1/40 sec, ISO 200. See more of her insect macros at www.flickr.com/photos/mobiledoll. Read our test of the Nikon D3000 on page 76.

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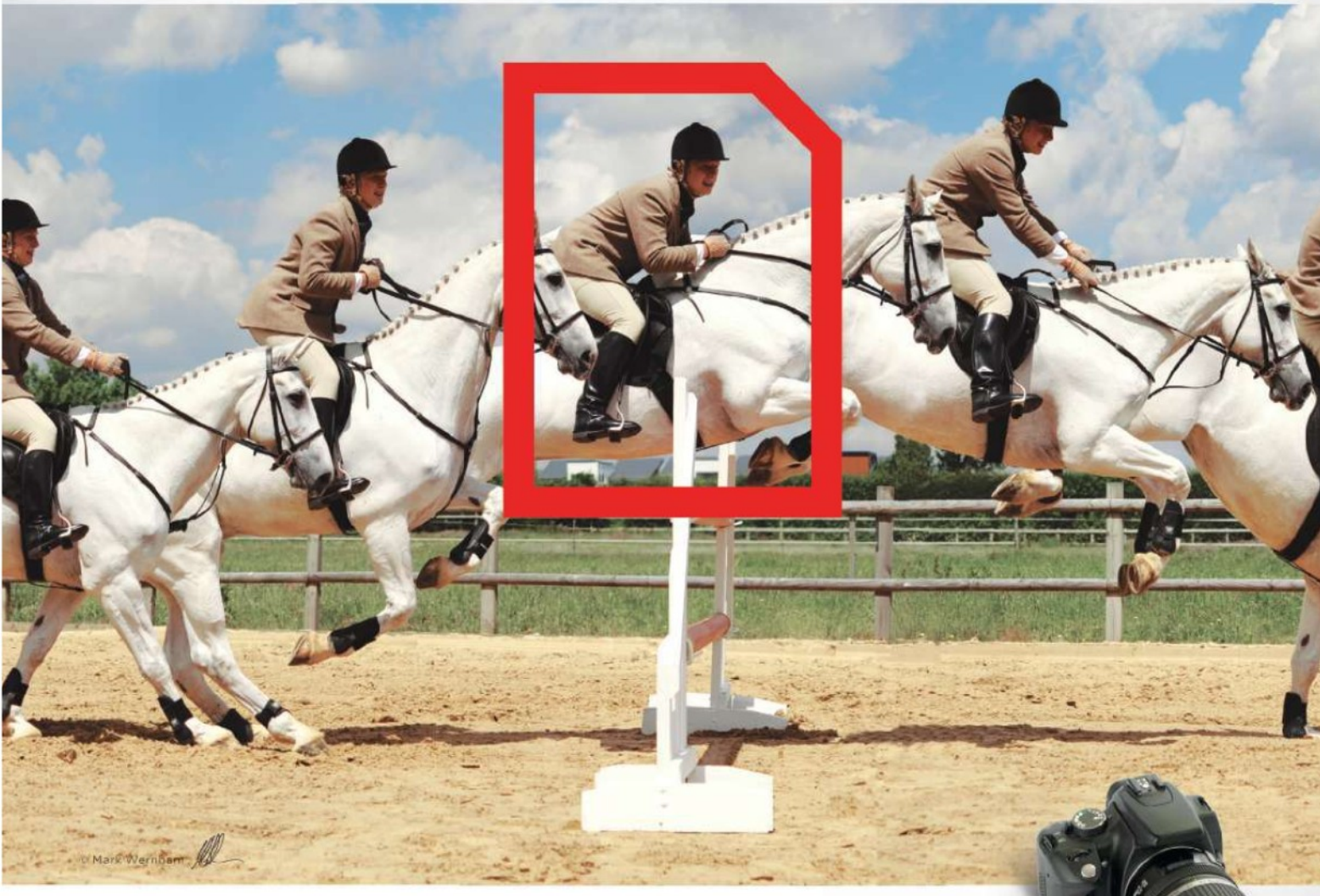

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NEXT

THE HOTTEST NEW STUFF AND THE TECHNOLOGY TRENDS BEHIND IT

A FAST, WIDE PRIME LENS FROM NIKON 12

PANASONIC'S POCKET CAM FOR TRAVEL 18

WHAT'S INSIDE KODAK'S INKJET PRINT HEAD 20

WE WANT THIS

THE BEST REBEL YET?

Canon's new top-of-the-line entry-level camera gets much of its tech from the EOS 7D

CANON CONTINUES the Rebel charge with the most powerful version ever—and the most powerful DSLR in any "entry-level" line—its EOS Rebel T2i.

Typical of Rebel intros, this newcomer boasts technology from a higher-level model, in this case the EOS 7D. Besides the 18-megapixel CMOS sensor with gapless microlenses, the T2i inherits the autofocus system that tracks by color and shape, 1920x1080p video at 30 frames per second, manual exposure in video, stereo microphone input, 63-zone dual-layer multipattern metering, quick-control button for fast access to settings, and ISOs up to 12,800.

But the T2i has several features not seen in any other EOS camera—or, for that matter, any current DSLR. The 3-inch LCD is the finest-grain to date, with 1.04 million dots. And a "movie crop" mode uses a 640x480 central patch of the sensor for a 7X magnified view.

With all this great stuff, this is one Rebel we can't wait to test.

CANON EOS REBEL T2i

18MP CMOS
1.04-million-dot, 3-inch LCD
Up to 60-fps video
$800, estimated street, body only
www.usa.canon.com

With the T2i entering Canon's Rebel line, the T1i drops to the middle slot, and the XS continues as Canon's bargain-level model. The Rebel XSi will be discontinued.

A PRIME CHOICE

Nikon's new pro-caliber wide and bright lens

NIKON SHOOTERS looking for a truly high-end, ultra-fast, wide-angle prime didn't have many options—until now.

This pricey new Nikon 24mm f/1.4G ED AF-S lens fills a hole in the company's catalogue, offering a truly big aperture and an angle of view that can take in the whole scene. A full-framer, this lens also gives DX-sensor shooters an option at an equivalent of about 35mm.

Containing 12 elements in 10 groups, including two Extra Low Dispersion (ED), two aspherical lenses, and Nikon's Nano Crystal coating, this 24mm should keep flare at bay, hold chromatic aberration down, and—we hope—produce sharp images. With rounded aperture blades, it's designed to create beautiful out-of-focus areas as well.

Competition is good for the photo industry: We can't help but wonder if this prime's release was prompted by Canon's similarly appointed lens about a year ago. Look for our Pop Photo Lab test soon.

Nikon 24mm f/1.4G ED AF-S
$2,200, street
www.nikonusa.com

A BETTER BATTERY

Rechargeables that perform more like disposables

RECHARGEABLE batteries are greener than disposables, but they usually give fewer flashes per charge than alkalines. PowerGenix's new NiZn (nickel-zinc) 1.6-volt rechargeables, however, more than match the 1.5 volts you get from disposables, and the company says they can be recharged up to 1,000 times.

PowerGenix rates the life of its cells at 2500 milliwatt-hours (mWh), translating to about 1500 milliampere-hours (mAh). That's below the 2500 mAh that some NiMH rechargeable batteries offer, but we'll take longer-lasting batteries any day.

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NEWS FEED

>The award for Least Expected Camera Introduction of 2010 (so far) goes to the Fujifilm GF670 Professional, a folding, medium-format film rangefinder. Yes, you read it right: film. This modern take on a 1930s Zeiss Ikonta will go for about $2,200.

INSIDE TECH

Think Zinc

Scientists have long known that Nickel (Ni) and Zinc (Zn) work together to make an excellent battery. But until now they hadn't been able to come up with an electrolyte that didn't degrade the zinc electrode. PowerGenix's patented electrolyte solves this, making it possible to create the first-ever NiZn rechargeable batteries.

SIGMA

OUR WORLD

Nathan Welton / Born in 1977 in the United States. Has travelled the world photographing athletes engaged in adventure sports and horseback riding. Featured in advertisements, newspapers, magazines, and other media, his photos have been recognized with a variety of awards. His wedding photography company "Dreamtime Images" is an internationally known studio.

Photo data: SIGMA 10-20mm F3.5 EX DC HSM, 1/640 second exposure at F6.3

NATHAN WELTON SHOOTS THE WORLD WITH A SIGMA LENS.

In a Colorado national park, the snow-covered dunes stand out against the deep blue sky. A few days earlier, a storm had blanketed the sand dunes with snow. The strikingly beautiful contrast between the expansive sky, the pristine dunes, and the people passing through this landscape was captured by the Sigma 10-20mm F3.5 EX DC HSM, a super-wide angle zoom lens for digital SLR cameras. With a maximum aperture of F3.5 throughout the entire zoom range, its super-wide angle perspective enables breathtaking, one-of-a-kind shots. ELD (Extraordinary Low Dispersion) and SLD (Special Low Dispersion) glass elements and aspherical lenses provide excellent correction of all types of aberrations. The Super Multi-Layer coating reduces flare and ghosting, and the incorporation of HSM (Hyper-Sonic Motor) ensures a quiet and high-speed auto focus.

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PISTOL GRIP

This camcorder and camera combo has a novel shape

SANYO'S NEW Xacti VPC-CG102 Dual camera is accurately named—the vertically shaped shooter is almost as much a still-image shooter as it is a video-making machine.

Switching between two internal lenses, it has a 12X zoom range equivalent to 40–480mm. The 2.7-inch LCD swings out for shooting, whether you're capturing HD video at up to a resolution of 1080i, or 14MP stills. Data gets written to an SD card, and this machine will accept the super-high-capacity SDXC format as soon as cards become available.

This is a camera for someone who has been considering similarly compact, oblong video cameras, but would like more in the way of features and control.

▶ The compact for shooters who take more video than stills.

With its novel grip, Sanyo says the whole camera can be controlled with a single thumb.

Sanyo Xacti VPC-CG102 $230, estimated street us.sanyo.com.com

LENS-READY

A ballhead-mountable gimbal

WHEN YOU'RE shooting with a big telephoto lens—one of the monster f/2.8 and f/4 varieties—you need a gimbal head. They're indispensable for following birds or wildlife at a distance with ease. The problem? Gimbals can cost a bundle.

Now Induro has stepped in with a model that won't break the bank. Its GHBA unit attaches to any adequately sized ballhead via an Arca-Swiss quick-release plate, converting it to a gimbal-style head. Now, you don't have to switch tripod heads each time you need gimbal action.

Induro GHBA gimbal head
$204, street
www.indurogear.com

NEWS FEED

>Want to see Earth from space? Check out the Twitpic feed of Astro_Soichi, who's shooting from aboard the International Space Station.

>Happy birthday, infrared photography! One hundered years ago, Robert Williams Wood published the first infrared images in the *Journal of the Royal Photographic Society*.

>The Olympus E-PL1 (page 73) looks swell on dry land, but how about under the waves? Divers and swimmers can buy an underwater housing for it—the first for a Micro Four Thirds camera.

>We're sorry that Apple's iPad is camera-free, but at least Apple will sell a camera connection kit, allowing you to offload your photos over USB or with an SD card.

New Software

Apple Aperture 3

While Apple built Aperture (www.apple.com; $200, direct, for Version 3) with its eyes on pros, it seems to have found a niche among Mac-loving enthusiasts graduating from iPhoto. **The latest version has features that should appeal to that crowd, including a beefed-up adaptation of Faces, the face-recognition tool in iPhoto, and the excellent Places, which uses the GPS data prevalent in ever-more cameras to place photos on a map.** Version 3 also adds the Brushes tool, which lets users paint effects directly onto photos.

THE LOWDOWN

Digital cropping done right

On its new EOS Rebel T2i, Canon put into action something we had wondered if anyone would try: The company calls it Movie Crop mode. When making standard-def video, you can opt to shoot with the center of the sensor for what looks like a 7X zoomed-in picture—without appreciable data loss. We hope other companies will follow suit, and maybe do it with HD video, too.

Nikon

At the heart of the image

FAST. TOUGH. AGILE. MUCH LIKE ITS SUBJECT.

THE NIKON D300S, WITH HD VIDEO. THE ULTIMATE IN NIKON DX-FORMAT PERFORMANCE.

GO TO WWW.NIKONUSA/D300S TO SEE THE HD ROLLER DERBY VIDEO "GLAMOUR JAMMER," CAPTURED BY SANDRO.

See how renowned photographer Sandro takes advantage of the fast, nimble D300S and its spectacular image quality to profile Bethany, a fierce competitor in the rough-and-tumble world of roller derby. Housed in its magnesium-alloy body is a 12.3-megapixel DX-format CMOS sensor. The D300S enables continuous shooting at up to 7 FPS, coupled with a 51-Point AF system for focus speed, accuracy and razor sharpness. Add outstanding HD video capabilities and legendary NIKKOR® lenses and the D300S gives Sandro a whole new set of creative tools.

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WIDER REACH

Two new ultrazooms boast truly huge ranges

TWO OF THE newest ultrazoom cameras out there—Fujifilm's FinePix HS10 and Olympus' SP-800UZ, at 24–720mm and 28–840mm equivalents, respectively—have the broadest ranges (30x) we've seen yet. So you'll be able to capture the whole extended family in a wide-angle vacation shot, or close in on the soccer player all the way at the other end of the field. Since both offer HD video (1080p for the Fuji, 720p for the Oly), that range will work for motion, too.

Sure, superzooms, with their big lenses and tiny sensors, have limitations, especially in low light. But no other type of camera will get you that kind of zoom range—and reach—along with compact size and reasonable price.

Fujifilm FinePix HS10
$500, street
www.fujifilm.com

Olympus SP-800UZ
$350, street
www.olympusamerica.com

NEWS FEED

>In February 2010, Canon made its 50 millionth lens, a few months behind Nikon.

>Wacom's Intuos4 pen tablet impressed us with its 2048 levels of pressure and ambidextrous design. Now it's available in a wireless Bluetooth edition, great for presentations.

>Want a really goofy time-waster? Visit Funphotobox.com and upload your pictures to see them superimposed into a wide range of silly situations. Then share them with friends.

>Michael Dell, founder of the eponymous PC company, along with his investment group, has purchased Magnum Photos' print archive. The collection will be housed for research at the University of Texas at Austin.

TOOLBOX

SMALL PC

Size of a netbook, power of a laptop

Netbooks have long appealed to photographers—traveling shooters with already heavy gear appreciated their compact builds. But Lenovo's ThinkPad X100e series (starting at $450, www.lenovo.com) does netbooks better. Starting at less than 3 pounds, these have lots in common with bigger laptops: full-size keyboard, optional dual-core AMD processors, and room for up to 4GB RAM and a 320GB hard drive. An SD/Memory Stick reader is built in, so you can offload and share from the road.

LJUPCO SMOKOVSKI/FOTOLIA (LAPTOP SCREEN IMAGE)

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SOURCE: Flickr

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A small camera with big reach takes aim at travelers

PAPIRAZZI/FOTOLIA (LCD IMAGE)

PANASONIC'S NEW 12.1MP Lumix DMC-ZS7 ($400, street) isn't your run-of-the-mill compact—it's got more zoom range and does more sophisticated internal image processing than most.

But it's not exactly an advanced compact, either—it's smaller and lighter than Canon's G11, for instance, and it doesn't shoot RAW, give you an optical viewfinder, or sport a hot-shoe for accessories.

Need a camera for the trip of a lifetime, but want it to slip easily into your pocket? When off, the ZS7 measures just 4.1x2.4x1.3 inches.

Panasonic Lumix DMC-ZS7
$400, street
www.panasonic.com

Instead, this camera exemplifies a category that Panasonic itself invented with the launch of the Lumix DMC-TZ1 in 2006—the "travel zoom." A cute, pocket-sized camera with sophisticated features, the new ZS7 may be the most powerful camera of its dimensions.

The ZS7 includes what Panasonic calls Supersonic AF—not new to this model, it helps with one of the major complaints a lot of snapshooters have with compacts: slow focusing. Panasonic claims that it cuts focusing time roughly in half, and we were impressed with how fast a preproduction version of the ZS7 locked in on subjects.

Two additionally important processor-heavy features: Intelligent Resolution and Intelligent Zoom. With the former, Panasonic's image processing produces an effect similar to Adobe Photoshop's Smart Sharpen tool: It brings out details in textured areas, but avoids heightening noise in smooth areas.

While we normally steer clear of digital zooming, arguing that it amounts to an in-camera crop that greatly reduces resolution, Intelligent Zoom gives a judicious amount to extend the camera's reach to 16X (25–400mm, full-frame equivalent) from its 12X optical range of 25–300mm (equivalent). And since Intelligent Resolution kicks in at the same time, it produces the best-looking digital zoom pictures we've seen yet.

The ZS7 also includes GPS to add location information to your images' metadata, as well as a 3-inch, 460,000-dot LCD, 720p AVCHD Lite video capture, and a mini-HDMI output.

And Panasonic upgraded its lens-based image stabilization system, now called Power O.I.S. The company says it provides 2 stops more handholding leeway than its old Mega O.I.S.

—Philip Ryan

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DROP GUNNER

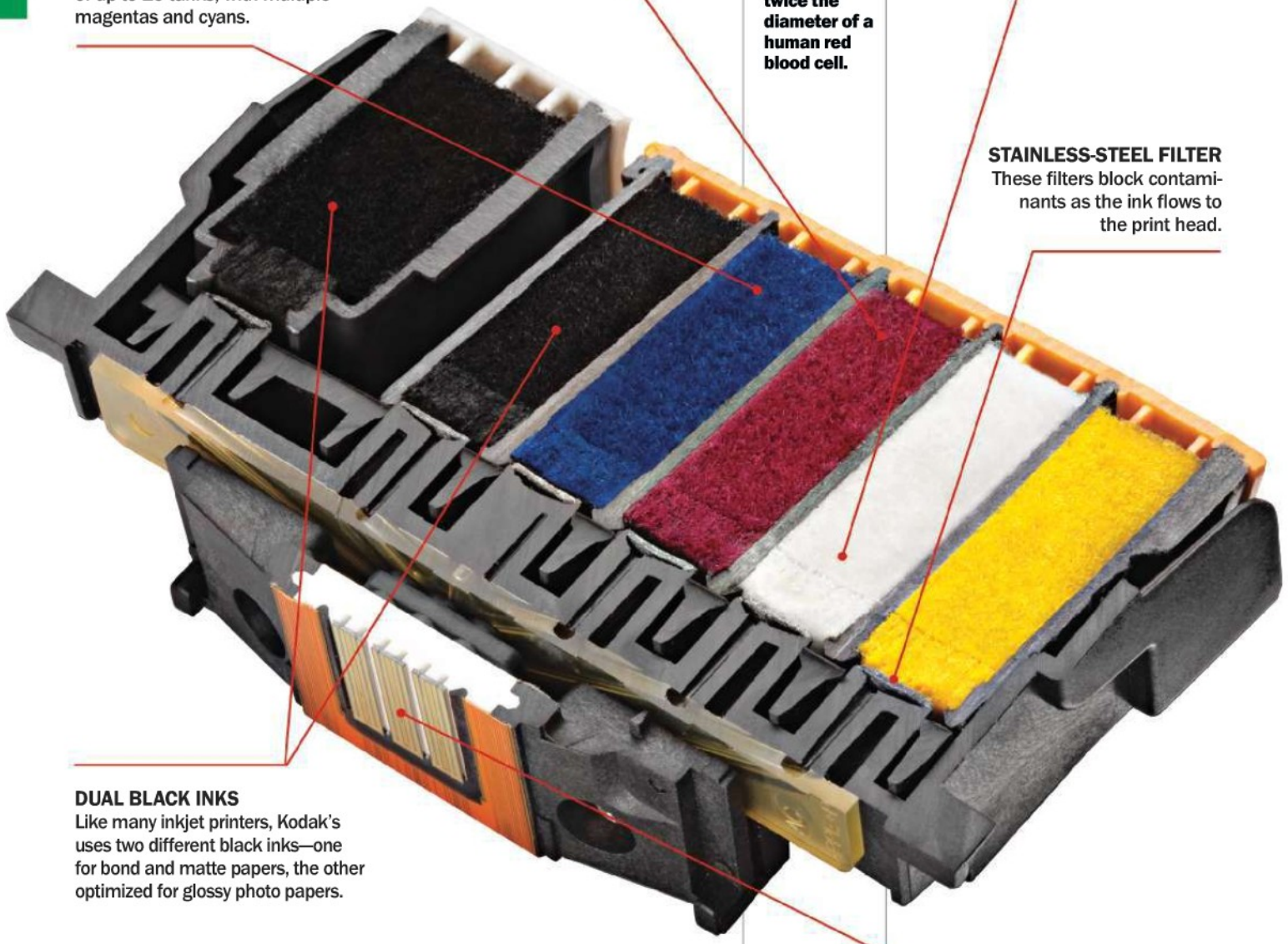
Kodak's inkjet printer head sprays millions of dots

INK TANK
Beside the two black inks, there are tanks of cyan, magenta, and yellow, plus a protective coating. Some inkjet printers use a total of up to 10 tanks, with multiple magentas and cyans.

HIGHLY ENGINEERED FOAM
Foam housing the inks maintains the constant backpressure required by the ejectors.

The nearly 3,900 inkjet ejector nozzles are a little less than twice the diameter of a human red blood cell.

PROTECTIVE INK
A clear coating provides photos with extra durability and improved image quality.



STAINLESS-STEEL FILTER
These filters block contaminants as the ink flows to the print head.

DUAL BLACK INKS
Like many inkjet printers, Kodak's uses two different black inks—one for bond and matte papers, the other optimized for glossy photo papers.

DIGITAL PHOTOGRAPHY is so dependent on image processing that we can sometimes forget that what makes it possible are mechanical devices—an inkjet printer head is a perfect example. The one seen here, used in all current Kodak inkjets, can fire up to 90 million 2.7 or 6.5 picoliter ink droplets per second from 3,840 individual ejectors. Pretty awesome.

EJECTORS
Each of the ejectors has a tiny heater located above the nozzle bore. When commanded by image processing, the heater fires, generating a vapor bubble that expels an ink droplet.

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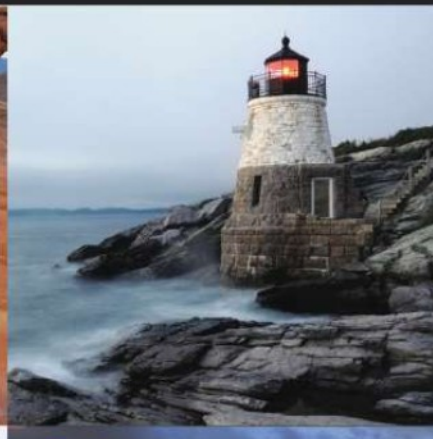

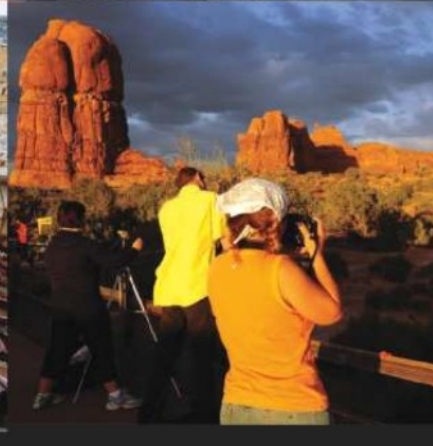

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SPECIAL ACCESS: 2010 TOYOTA DESERT RACE

The Mentor Series invites you on a photographic journey of a lifetime filled with breathtaking adventure, stunning vistas and diverse wildlife at every turn! Join us as we travel to Botswana, one of the jewels in sub-Saharan Africa's crown—a country positively brimming with photo ops your camera has certainly yet to encounter this side of the Atlantic. Nikon professional photographer Reed Hoffmann will guide you through Botswana's deserts and savannas, offering photo tips along the way to ensure you come away with images as brilliant and unforgettable as your experience.

Botswana is an outstanding destination that provides a true sense of adventure on a photo safari—something you will discover for yourself when you take to the veldt, camera in hand. As you look out at the serene beauty of the grassland, the seemingly endless sky of luminous hues stretches across the horizon and above the majestic wildlife roaming through their natural habitat. Here, your heart is sure to pound in sync with each click of your shutter. Fill your frame with tens of thousands of magnificent animals, lions, elephants, giraffes, zebra, wildebeest, leopards, cheetahs, hippopotamuses, rhinoceroses, African buffalo, hyenas, and antelope, to name only a few! Although words alone will not describe this luxurious safari, the remarkable images you capture will speak volumes of your time spent in one of the most fascinating regions of the world.

In addition to being exposed to the complete visual wonder Botswana offers year-round, you are in for an exclusive photo opportunity on this trek—the schedule coincides with the 2010 Toyota Kalahari Botswana 1000km Desert Race, an annual event for off-road racing. Spend the first two days enhancing your portfolio with action shots of off-road vehicles zooming through the desert in blazes of color and sprays of dirt. The route winds through thorn trees, across deep sand and riverbeds in both remote and populated areas of the Kalahari, giving you a true variety of landscapes and backdrops. Enjoy special access to the finish line arranged specifically for the group.

Don't miss out on this opportunity to see Africa with the Mentor Series and a chance to create jaw-dropping images and incredible memories that you will never forget.

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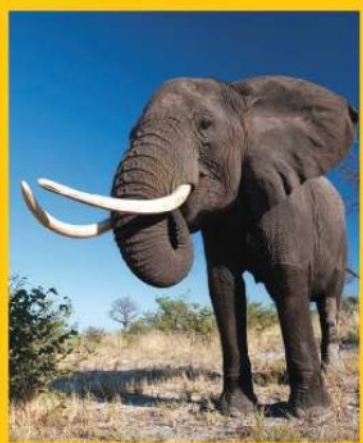

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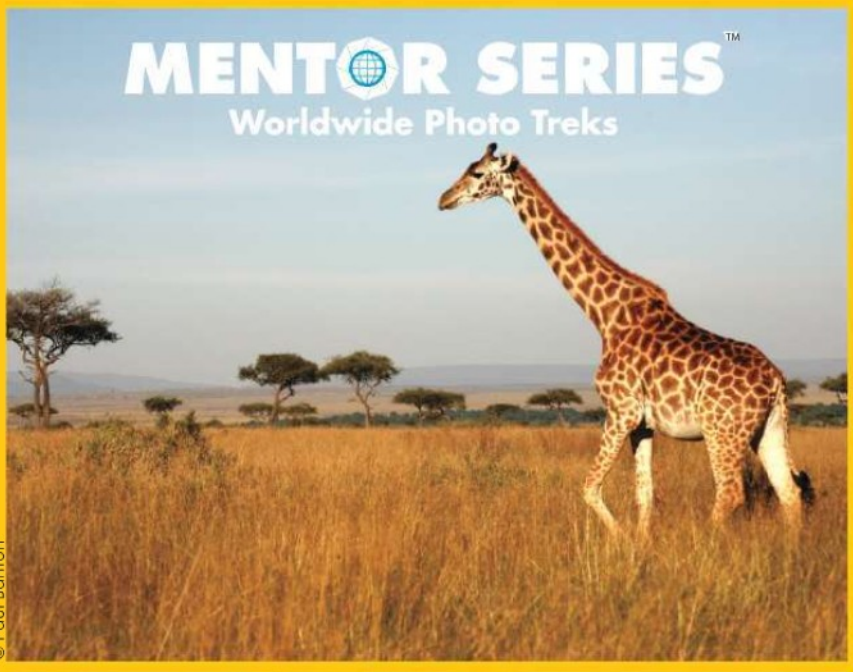

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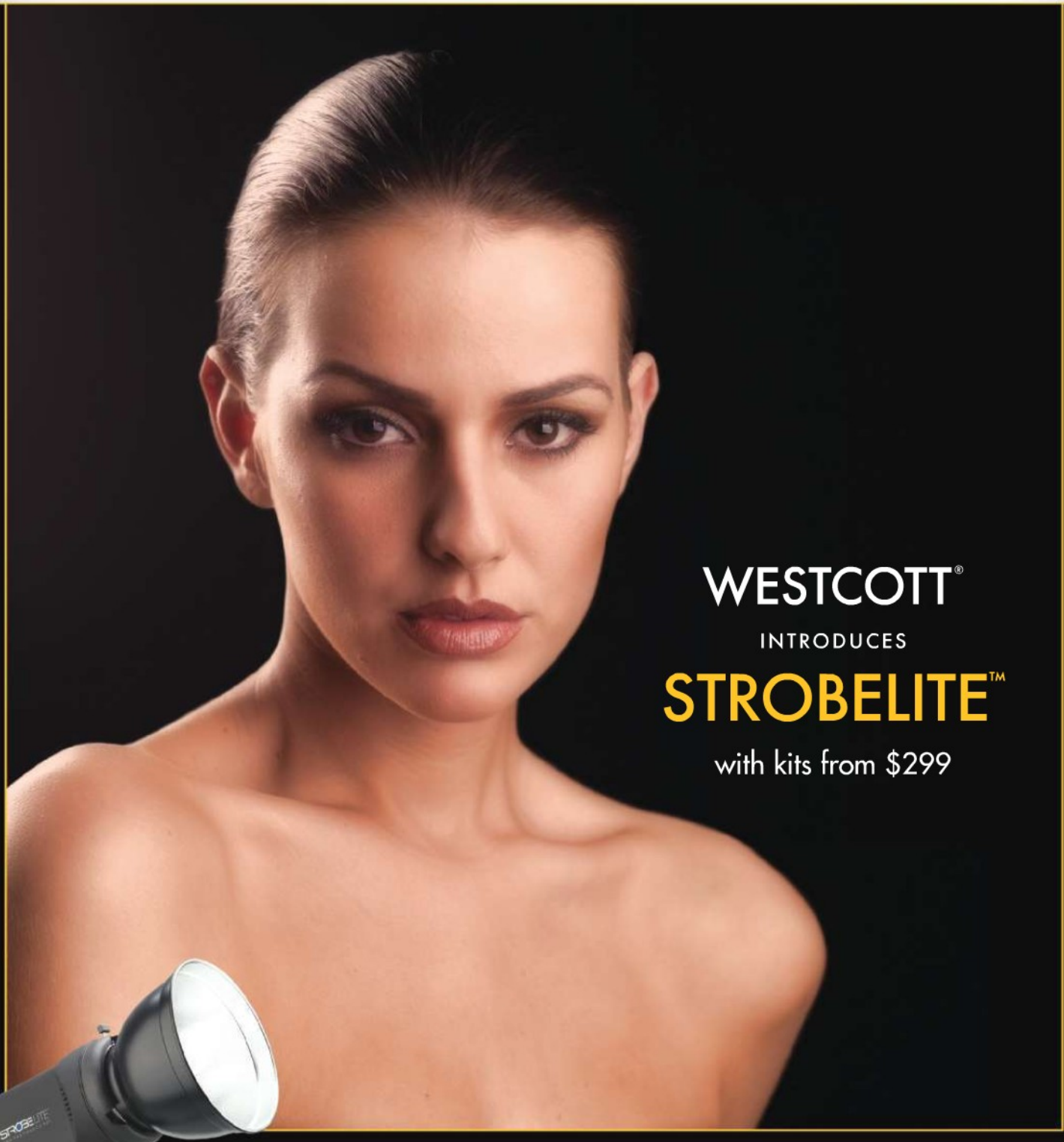

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PHOTO CHALLENGE

ALMOST HUMAN

A teenager evokes a sense of kinship with a caged gorilla

DUSTIN STOLL, 18, shoots sports events for Hutchinson Community College in Kansas, where he's a student. And, he says, "my favorite photography is macro, especially bugs." But he had only really photographed in color—until he saw our January 2010 black-and-white Photo Challenge.

Shot with a Canon EOS 5D and 70–200mm f/2.8L Canon EF lens; 1/160 sec at f/2.8, ISO 100.

Stoll originally shot this image in color at Rolling Hills Wildlife Adventure in Salina, KS, using his Canon EOS 5D. Passing by a gorilla pen, he noticed the ape's hands. "They have a human resemblance," he says, "but also a really cool texture." So he zoomed in for a tight close-up.

Looking at the image later, he was struck again by the texture, and realized that it would make a great candidate for b&w. So he converted it in Adobe Photoshop.

The result? This picture, much better than most first tries. You can see more of Stoll's photos at stollpics.com. *—Lori Fredrickson*

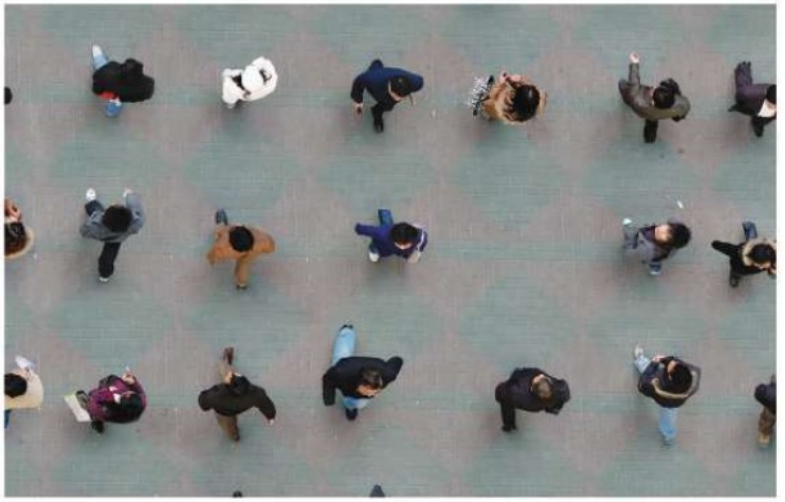
DUSTIN STOLL

NEXT PHOTO CHALLENGE

Like Skip Caplan (page 46), use reflectors instead of direct lighting for a still life. Read the rules at PopPhoto.com/Photo Challenge.

View From Above

What you see here isn't what you get in the big picture



ADAM MAGYAR (SQUARES); ZAZI (PORTRAIT)

This looks like a mass of pedestrian traffic on an enormous plaza, moving in formation. But it's actually a composite of hundreds of shots, and at its super-high resolution, you can zoom in to view each individual at close range.

Adam Magyar, 37, is a graphic artist and photographer based in Berlin. See this and other work of his at www.magyaradam.com.

"I USED TO do street photography," Adam Magyar says, "but my photos always revolved more around a theory of urban space than a single image. And so it occurred to me to make that theory an image."

Magyar's ideas about urbanity are what inspired this project, *Squares*. What appears to be a crowd of street traffic on a very large plaza is in fact a composite: It's a single image made up of all the pedestrians who cross a small chunk of sidewalk during three 2-hour photo shoots. Each of the nine completed images is an extremely high-resolution, massive file.

Printed, they span nearly 6x10 feet. But the best way to view them is on Magyar's website (www.magyaradam.com), where, by moving across the screen with your mouse, you can use the cursor to automatically zoom in on each of the individual figures, as if you were looking through a telescope.

The 37-year-old graphic designer was inspired to make the images based on his own observations of the density and anonymity of city life. He came up with it while planning another project, *Urban Flow*—which also combines multiple images of pedestrians, but into very long panoramas.

Though based in Berlin, he traveled across the globe to tackle the project. "To get the right distance and perspective for the images," he says, "I needed to photograph from about 13 to 16 feet overhead, and the best locations for this

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are pedestrian overpasses that look down on sidewalks."

In his travels, he'd found that these were much more common in Shanghai and Hong Kong, which is where the photographs for these images were taken. He is currently working on one shot in New York.

The sidewalks Magyar was looking down on had to be relatively litter-free, so that the surface area would be homogenous enough to stitch together later. He used Google Earth for research, then, having made a list of sites, he visited each to gauge street traffic: "There had to be not too few nor too many pedestrians," he says.

Shooting with a Canon EOS 5D and either a 50mm or 100mm lens, Magyar spent about 2 hours shooting at each location. He arrived just before or after midday for consistency of light, and stationed a tripod on the overpass—first shooting from the apex and then from other perspectives on the left and right of the overpass.

When working in Photoshop, Magyar dealt with image files that included up to 300 layers and saved at about 30GB.

He would return to a location several times (at the same time of day and in the same weather), until he had about 1,000 total usable images.

Then came compositing the image, a complicated process that required writing custom scripts to use in Adobe Photoshop. First, he wrote a script to create an entirely new background for the figures to stand on, one that was large enough and high-resolution enough to accommodate all the figures he wanted to include—at least 300 and sometimes over 400.

He separated multiple samples of bricks, and used his script "to randomly reorder them," so that at no point were there any noticeable patterns other than the shape of the bricks themselves.

Once he'd assembled the background, Magyar wrote a second script to randomly reorder and position his figures across the new, huge background. Details such as the shadows of the figure are computer-generated and added later in 3-D software apps (he prefers not to say which ones).

"It was interesting to work on," he says, "because when I look at the people walking in and out of the images, I think if I were one of these people I would be just a pedestrian, too."

—Lori Fredrickson

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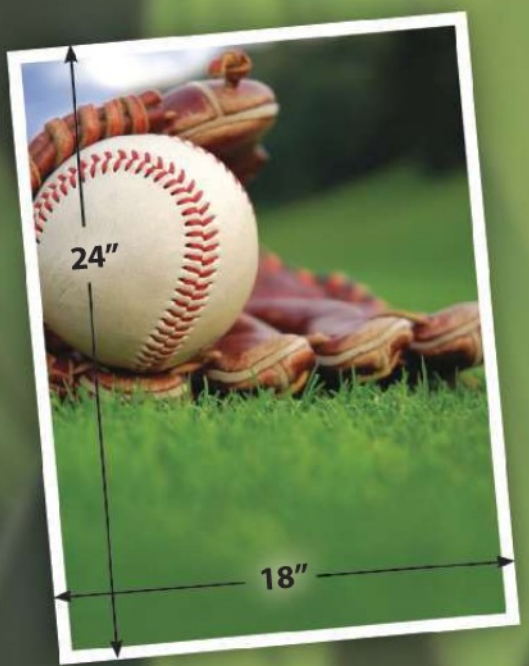

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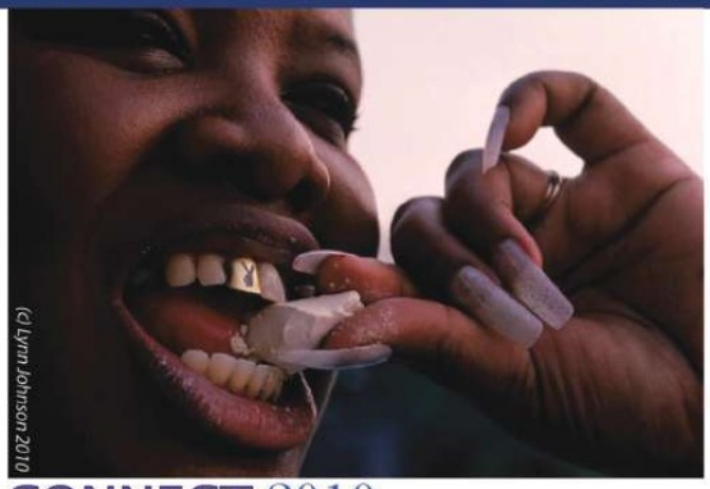

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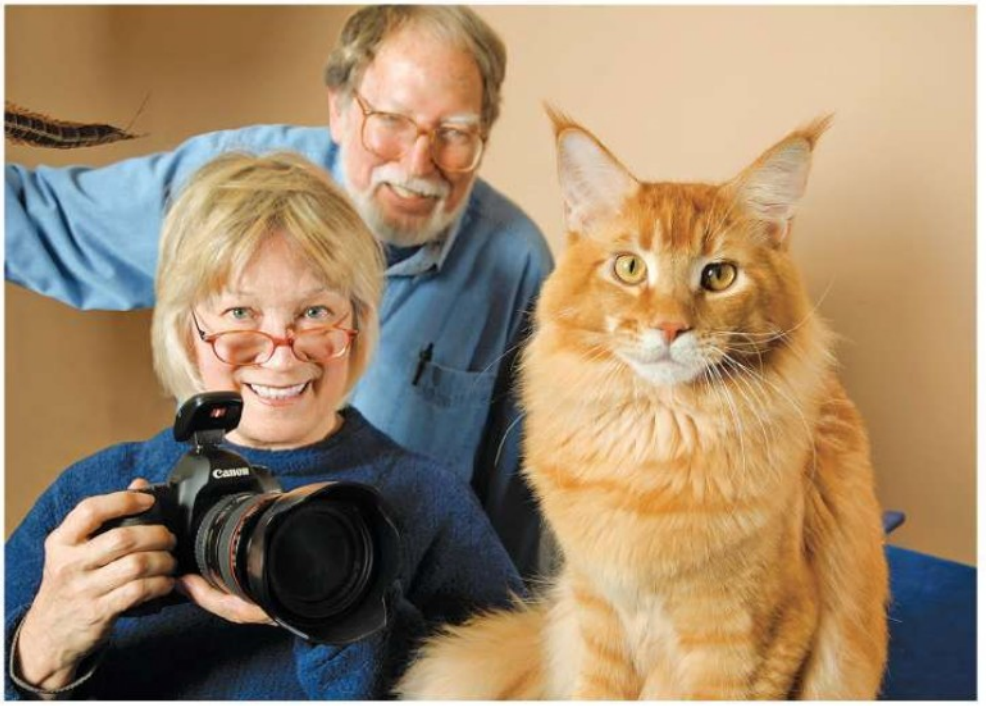

THOMAS SINGER

CAT PORTRAITIST SEEMS LIKE AN UNUSUAL CAREER.
I only know of six or seven people who do it professionally.

HOW DID YOU TURN PRO?
I've always loved cats—we have four. I'd often photographed them, but when my husband Ken gave me a digital camera in 1999, it changed everything: I instantly saw what I was doing wrong. I got a studio light, and he built a table to photograph my cats on. A friend introduced me to the show manager of a cat club—I sent her some images, she invited me to be the show photographer, and I've been a professional since then.

WHO ARE YOUR CLIENTS?
Most are cat breeders and owners. The breeders put our images into association yearbooks to help get kittens to potential owners. Owners want pictures of their cats just like people want pictures of their kids. Our other markets include magazines such as *Cat Fancy* and advertising. After 18 months of working, I was approached by the Cat Fanciers' Association (CFA) and The International Cat Association (TICA), to be the official photographer for international cat shows—I do 10 to 12 shows a year.

WHAT IS A SHOW DAY LIKE?
We get to the show hall the day before and spend 3 or 4 hours setting up and testing our gear. On show days, we are extremely busy from 9 to 5. We always have the owners stay. I usually shoot for about 15 minutes, take 5 to 10 minutes to look over my shots, and download a CD of 20 to 30 of the best ones for the owners to take home. An entire shoot usually takes about half an hour. We try to book the cats according to background color—we bring about 20 backdrops with us.

HOW DO YOU PICK THE COLORS?
I photograph the natural breeds—for instance, Maine coons—against colors found in nature, such as greens, browns, gold, warm burgundy. and blacks. Luxurious breeds, such as Persians, I photograph against jewel-toned background colors.

WHAT GEAR DO YOU USE?
I'm shooting with a Canon EOS 5D Mark II and a 24–105mm f/4 lens. Our main flashes are AlienBees: a B800 and two B400s. We light our backgrounds with a small Quantaray MS-1 slave flash. I make my own backgrounds with materials from fabric stores—solid colors and stretchable fabrics, for a clean, wrinkle-free look.

ARE CATS EASY SUBJECTS?
Working at a cat show is like being on a bomb-defusing squad for two days. Cats don't take commands. Ken works the lights and uses a "teaser," such as a pheasant feather on a long rod, to get their attention. The large longhaired breeds such as Maine coons are more easygoing and cooperative to pose. Active breeds, such as Bengals, love to play and give us great action shots. A few breeds, like the Siamese, are more camera-shy and aloof. Kittens are always easy. The challenge is to make it fun for them. About one out of every 20 is too difficult to get all the shots we want, but then we'll just try again at the next show.

—Interview by Kathleen Davis

Helmi Flick (www.helmiflick.com) and her cat-wrangler husband, Ken, based in Bedford, TX, travel the world taking feline portraits. They pose here with a red Maine coon in their mobile studio at the Jersey State Cat show. See a gallery of Helmi's work at PopPhoto.com/cats.

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MARK WATSON (PENCIL); ANDRES CALDERA (MT. RAINIER)

Fast Shots

I WAS FASCINATED by the article "Breaking Point" (You Can Do It) in your February 2010 issue and decided to try my hand at high-speed photography.

I built a Schmitt Photogate-Delay Unit kit purchased from HiViz.com ($18, direct), and recently I used it to photograph falling drops of water. To do so, I set my Canon Speedlite 430EX flash unit in manual mode at 1/64. My camera was set for a 15-sec exposure in a dark room. During that 15 seconds, I dripped water through the triggering device, which set off the flash, resulting in what is effectively a 1/30,000-sec exposure.

This simple and very inexpensive setup can provide the basics for getting started in high-speed photography. Thanks for the inspiration!

Bob Starkenburg
Raleigh, NC

I WAS QUITE SURPRISED at the answer you gave Stan and Angela Pearlstein (Tech Support, February 2010) regarding the scanning of their stereo slides. I have been scanning my 35mm and Stereo slides with my Epson Perfection V200 scanner. No sweat, I just place one of the halves of the stereo slide in the frame and I am able to scan four at a time. Since the frame is larger than the slide, a slight enlargement and crop is needed after the image is scanned. I scan at 300 dpi and have had no adverse effects.

Mike Volker
Norwalk, OH

POPULAR PHOTOGRAPHY does a very good job in their camera tests. You have been doing this for years, and the tests give

us a lot of insight in what to expect in buying new equipment. I always go to Pop Photo for this information.

But I was wondering why your magazine does not include reports on the reliability of SLR cameras, as well as articles on their features? Is there a big difference between the major brands of SLR cameras concerning past dependability? Wedding photographers as well as amateurs need to know this information.

Charles E. Trimble
Rock Hill, SC

The problem with reliability information is that it's so, well, unreliable. We don't have an objective way to measure it, especially over time. But your suggestion has merit and we'll consider ways to report on this in the future.

IN FEBRUARY 2010, the second-place photo in the Your Best Shot contest is identified as Mount Rainier in Washington state. I am 99.9 percent sure that peak is Oregon's Mt. Hood. I live in Seattle, but have visited Hood many times. That is the south face of Hood, which I climbed once. ***Jeff King***
Marysville, WA

You're right—photos of Mounts Rainier and Hood submitted to Your Best Shot got mixed up. The Mt. Hood photographer did not put his or her name in the file name or EXIF data (if you're reading this, get in touch!), and we misidentified the image. We regret this error. Above is Andres Caldera's photo of Mt. Rainier, described in February's article. (To learn a quick and easy way of adding your name and copyright info to your images' metadata, turn to page 44.)

POPULAR PHOTOGRAPHY

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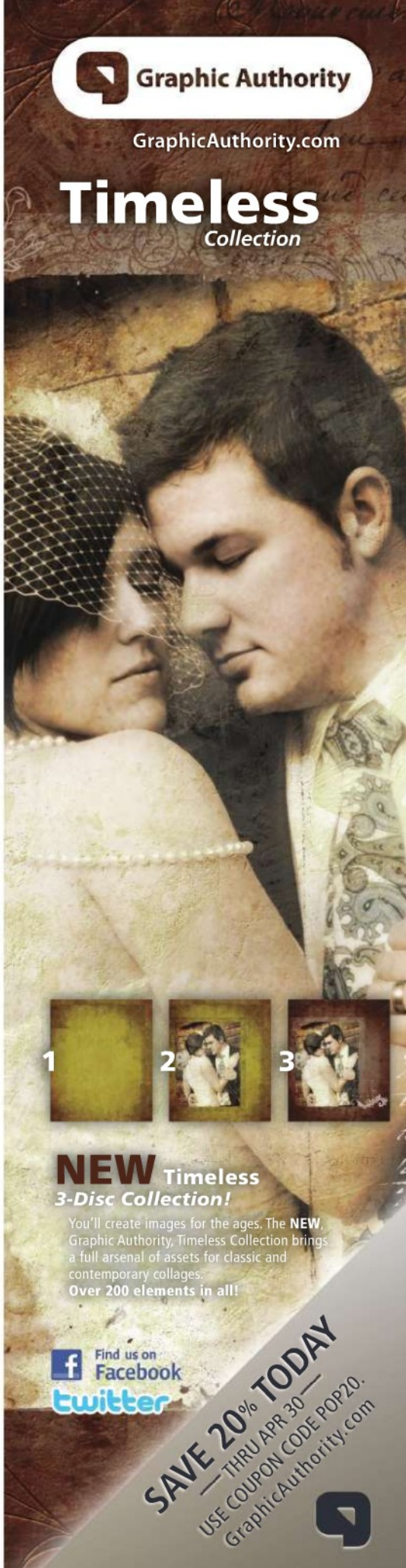

Card Conversion

Q I have a Canon EOS Digital Rebel camera that takes CompactFlash memory cards. My television has an SD slot. How do I convert my CF card to SD?

Ted Igleheart
Shelbyville, KY

A *Get a $20–$30 multicard reader. Most card manufacturers (Kingston, Lexar, SanDisk) make them. Readers connect to Mac or Windows computers via USB cable and function like an old-school disk drive. Insert a CF and an SD card simultaneously into the reader, then use your computer to drag image files from one to another.*

Q **HIGH DYNAMIC RANGERS**
Can I do High Dynamic Range (HDR) with my Adobe Photoshop Elements 2.0 without springing for a pricey upgrade to Photoshop CS4? *John H. Hurd*
Yreka, CA

A *You can't do real HDR using Elements 2—it doesn't have the tools. And because masking is so limited in all versions of Elements, it would be hard to composite different exposures of the same scene.*

There are free HDR programs, but, like most free stuff, they involve compromises. The open-source Qtpfsgui (qtpfsgui.sourceforge.net) requires more skills. Essential HDR Community Edition (www.imagingluminary.com) is fully functional, but outputs only 1MP files. FDRTools Basic (free) has fewer tools than Advanced (€39 or about $54, direct; www.fdrtools.com). If you have an older computer, check the system requirements.

Q **STEADIEST HOLD**
Would it be better to use a tripod or handhold an image-stabilized lens under low light? On a tripod, image stabilization is turned off, but stabilization would give up to 2–3 stops of handholding leeway. *Paul Wenz*
Lincoln, NB

A *A sturdy tripod is always the steadier alternative. Yes, you can get 2–4 extra stops with image stabilization, but on a tripod, after all, you can get 10, 12, even 100 extra stops—think star trails.*

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Lock up the camera mirror, if possible, for extra steadiness. While some newer stabilized lenses can compensate for mirror slap on a tripod, some older ones may actually add to blur in the same situation. Bottom line: Read the instruction sheet that comes with your lens. If there's any doubt, turn the stabilization off when you use a tripod.

Q GREASE FIGHTING

When I use the viewfinder of my DSLR, my nose leaves a smudge on the LCD that needs to be cleaned often. Is there a solution for this problem? ***Stan Davis***
Buena Park, CA

***A** Other than a nosectomy—which we strongly discourage—no. Camera manufacturers have developed LCD coatings they claim suppress smudges, but in our experience they're no match for nose grease. A little breath fog and a microfiber lens-cleaning cloth make for quick and safe cleanup. For stubborn smudges, moisten the cloth with a drop of an ethanol/distilled-water mixture, widely sold under the generic name "vodka."*

TIPS FROM A READER

WE GET so many queries on the use of older Vivitar electronic flashes (some of which may have triggering voltage high enough to damage a modern DSLR) that reader Jerry Yares of Maryville, TN, offered this checklist:

1. Check to see if the Vivitar flash was made in China. If so, odds are that it has a safe trigger voltage. The ones made in Japan and Korea generally are the high-voltage ones.

2. Do a simple DC voltmeter check of the flash's sync voltage. [Editor's note: The general rule is no higher than 6 volts.]

3. Safest bet: Buy a Wein Hot Shoe To Hot Shoe Safe Sync unit ($47, street). This mounts to the hot-shoe and the flash mounts to it, dropping the incoming voltage to a safe level. It also has a PC socket.

GOT A QUESTION?
E-mail us at PopPhoto@bonnier corp.com or visit the Tech Support forum at forums.PopPhoto.com

What Should I Buy?

Reader Josh Farr of Harrisburg, PA, wants a Canon 70–200mm f/2.8L IS lens. He could buy a gently used model for about $1,500 or wait for the new Mark II version that should arrive soon. A few years ago, we would have advised him to save some bucks and get the used optic. But recently we've seen such dramatic improvements in lens upgrades—and the 70–200mm was optically so-so to begin with—we'd say wait for the Mark II.

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Centers of Interest

This month's winners keep the focal point just off the center of the frame

3rd Place
$100 Prize

JACK LEVY, 58, ACCOUNT EXECUTIVE, WESTON, FL

"One very sunny day, a buddy and I went to Monkey Jungle, a South Miami habitat. Walking in one of the outdoor areas, we noticed this large iguana sitting in a tree, and I started to photograph it from different angles until I found one I liked. I used my Nikon SB-600 Speedlight to keep my subject bright against the background, and opened up to f/2.8 to blur out the tree." (www.imagesbyjack.net)

TECH SPECS: Nikon D300 with 70–200mm f/2.8G VR Nikkor lens and SB-600 Speedlight. Exposure, 1/2000 sec at f/2.8, ISO 800.

2nd Place
$200 Prize

BEN RYAN, 38, RADIO PRODUCER, BRISBANE, AUSTRALIA

"This was taken at Woody Point on Moreton Bay. I had heard about the wreck, so I went to capture it one morning, when sea mist was rising off the bay. I'd recently read about making landscapes with three main elements, so I positioned the tripod low to put the rock in the foreground. The ship is the second element; for the third, I waited 15 minutes for the right cloud to drift by." (www.redbubble.com/people/bensound)

TECH SPECS: Pentax K10D with Sigma 10–20mm f/4–5.6 lens. Exposure, 1/10 sec at f/13, ISO 100. Converted to b&w using Channel Mixer in Adobe Photoshop.

MONTHLY PHOTO CONTEST

Want to enter? Get all the info you need, including the official rules, at PopPhoto.com/YourBestShot.

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Terry Wawro / Wawro Photography

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Iveta Buck - Photographer

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1st Place
$300 Prize

GREG L. DAVIS, 38, PHOTO-JOURNALIST, SANFORD, NC

"I've been an aviation photo-journalist for about 20 years, first for the US Air Force for eight years and now for many aviation magazines. I was the first civilian allowed to fly with a military pilot in this new Navy aircraft, the T-6B trainer. We'd been in the air doing loops and other training events, but I knew my moment had arrived when we were heading towards the training base and the sun was slipping under the horizon. It illuminated the other plane and provided 'golden hour' light. I only had about 3 or 4 minutes to shoot the cockpit, using an off-camera flash. But this image will now be a cover shot for two aviation magazines." (www.focalplaneimagery.com)

TECH SPECS: Nikon D3 with 16mm f/2.8D Fisheye-Nikkor, SB-800 Speedlight flash. Exposure, 1/80 sec at f/2.8, ISO 200.

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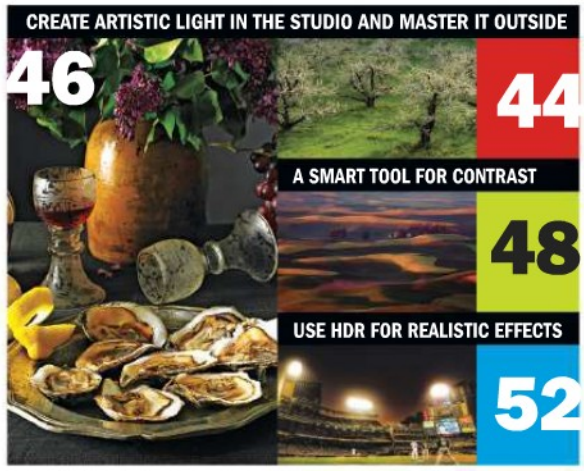
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CREATIVE THINKING

BOWLING FOR PLEASURE

Paul Mobley brings big production values to his personal work

PROS KNOW the secret to sustaining creativity over a long career. It's called "personal work," and New York commercial photographer Paul Mobley (www.paulmobleystudio.com) sums it up as "the joy that reminds me of why I became a photographer."

PAUL MOBLEY

It took eight light heads to put a trendy gloss on this old-school subject.

Early in his career, he found that his technically beautiful photos still "missed the magical moments because I was screwing around with the lighting," he says.

A prominent photo editor reviewed Mobley's portfolio and prescribed the cure: "Carry your camera with you everywhere, and shoot personal work." So he gave himself permission to "act on [his] daydreams and act on [his] ideas rather than shelve them." It was a career-changing moment.

One night while watching the film *Kingpin*, Mobley thought,

Wouldn't it be great to make a funny picture of a classic men's bowling team from the '70s? The next morning he began to tackle the idea just as he would for a client.

That meant he needed faces, uniforms, and a bowling alley—and help. He contacted Mark Martin, the president of the United States Bowling Congress, explaining who he was and describing his idea for a portrait of an old-school bowling team.

Martin got the idea immediately and said, "There's a giant tournament near Detroit—there will be at least 3,000 bowlers there. Let's go and hand-pick the guys you want!" He also hooked Mobley up with a company that made vintage bowling shirts, and with a traditional bowling alley.

Mobley had 3 hours on location, but he planned to shoot the group in 20 minutes. Beer and pizza helped everyone loosen up beforehand. "I wanted it to be wacky, funny, colorful, and obnoxious," he says. "I would scream or whatever, and at one point I said, 'Aaargh!' to get them to grimace. I was laughing so hard, I had tears rolling down my face."

Lighting posed a challenge because of the large space. Mobley and his assistant used four Profoto 8 powerpacks and eight Profoto light heads—three in front and above the bowlers (two behind a diffusing scrim, and one at center with a beauty dish), one bouncing off the ceiling, two lighting the back wall, and two aimed across the men's backs from each side. "This lighting is far from perfect," he says, "but it's exactly what I want it to be."

So he's still lighting-obsessed, but it's worth the effort. "These shoots are good for the soul," he says. "You can walk away from a shoot like this and say, 'What a great day!' And people love this picture." *—Laurence Chen*

FIX IT FAST

Gray Geese

The original, centered composition had too much empty space, robbing the image of a sense of movement. Exposure: 1/125 sec at f/3.7, ISO 250.

Replacing odd color with one color

YOU CAN'T be fussy with grab shots. Jamie Lee of South Hadley, MA, captured this scene in pouring rain, through her car's windshield, at an equivalent of 432mm on her handheld Sony Cyber-shot DSC-H2.

The murkiness of the photo doesn't bother us—it adds to the atmospherics. But what color is left doesn't do much good. So we decided to make it monochrome, using Adobe Photoshop CS4's Black and White tool in the form of an Adjustment Layer.

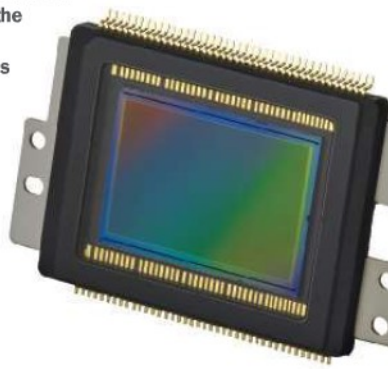
We cropped for a Rule of Thirds placement, with Mother Goose heading into negative space. Then we decided to put some color back with a selenium-like tone, using a Color Fill Adjustment Layer set to the Soft Light Blend mode. We dialed back the layer's opacity to 25% to keep it from turning into purple haze.

JAMIE LEE

See more of Lee's photos at jmelee.com. *—Debbie Grossman and Dan Richards*

DEBUNKER **MULTIPLYING RESOLUTION**

MYTH: If you double the number of pixels on a sensor, you double its resolution.
TRUTH: You'd increase resolution by only about 40 percent. To double the resolution, you need four times the number of pixels.
WHY: Image resolution is measured as a linear quantity—so many pixels per inch or centimeter. Total pixels, however, is an area measure.
EXPLANATION: Consider a 10x10-pixel, 1x1-inch sensor. It has 100 pixels total, and linear resolution of 10 pixels per inch—the square root of 100. If you double the number of pixels to 200, the linear resolution is the square root of 200, or about 14 pixels per inch. Only when you quadruple the pixel count to 400 do you get linear resolution of 20 pixels per inch. Similarly, if you want to triple the resolution, you need *9 times* the number of total pixels.



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QUICK TIP

Patience Pays

Sometimes the trick is simply to wait

HAVE YOU ever seen a compelling landscape you just can't capture at its best? Photographer Alan Nyiri knows just such a scene—an apple orchard on Mendon Mountain in Rutland County, VT, near his Vermont Photographic Workshop in Poultney (www.vermontphotoworkshops.com). "I fall in love with these trees every spring," he says. "I've been watching them for years, but the moment for photography was never right."

One spring morning in 2009, he pulled his car over and stepped out with his Canon EOS 5D Mark II in hand. "A mantle of fog created interesting light and a compelling scene, but not what I was looking for," he says. "There was a chance the morning sun would soon burn off the fog, so I waited."

Sunlight began to filter through, and his spirits lifted: "I watched as the light changed from dull, to good, to perfect, and finally to something almost spiritual, all in about 15 minutes. Then, just as quickly, it became dull again."

Nyiri finessed this image in Adobe Photoshop, selectively blurring and sharpening. But his real accomplishment was patience.

—Peter Kolonia

Alan Nyiri shot this using a Canon EOS 5D Mark II and 24–70mm 2.8L Canon EF zoom, a Manfrotto carbon-fiber tripod, and a cable release with mirror lock-up engaged.

ALAN NYIRI

30-SECOND PHOTOSHOP

COPYRIGHT CONTROL

TO ESTABLISH OWNERSHIP of your photography, we recommend adding your name and copyright information to the metadata of all your images as you import them. Users of Adobe Bridge CS3 or CS4 (included with Photoshop) have a great tool for this. To use it, open Bridge, then go to File > Get Photos from Camera. Click the button for the Advanced Dialogue, then under Apply Metadata, type in your name and copyright info. If you want more detailed metadata, first create a template in Bridge by going to Tools > Create Metadata template. From now on, the more detailed template will be available as an option whenever you import your images.

What's This?

SD CARD LOCK TAB

When engaged, the lock or "write protect" tab prevents the saving or deletion of files from an SD memory card. It's what makes a Secure Digital (SD) card secure.

Where it is: On the left-hand side of an SD card.

How it works: The switch is mechanical, placing a plastic buffer between contacts and thereby preventing data transfer. To avoid inadvertent writing or deleting of images, move the switch from the unlocked position (up) to the locked, write-protect position (down).

When to use it: Whenever you share cameras and memory cards with co-workers, friends, or family. By getting into the habit of locking SD cards, it's your sign to others (and yourself) that you haven't yet downloaded any files saved to it.

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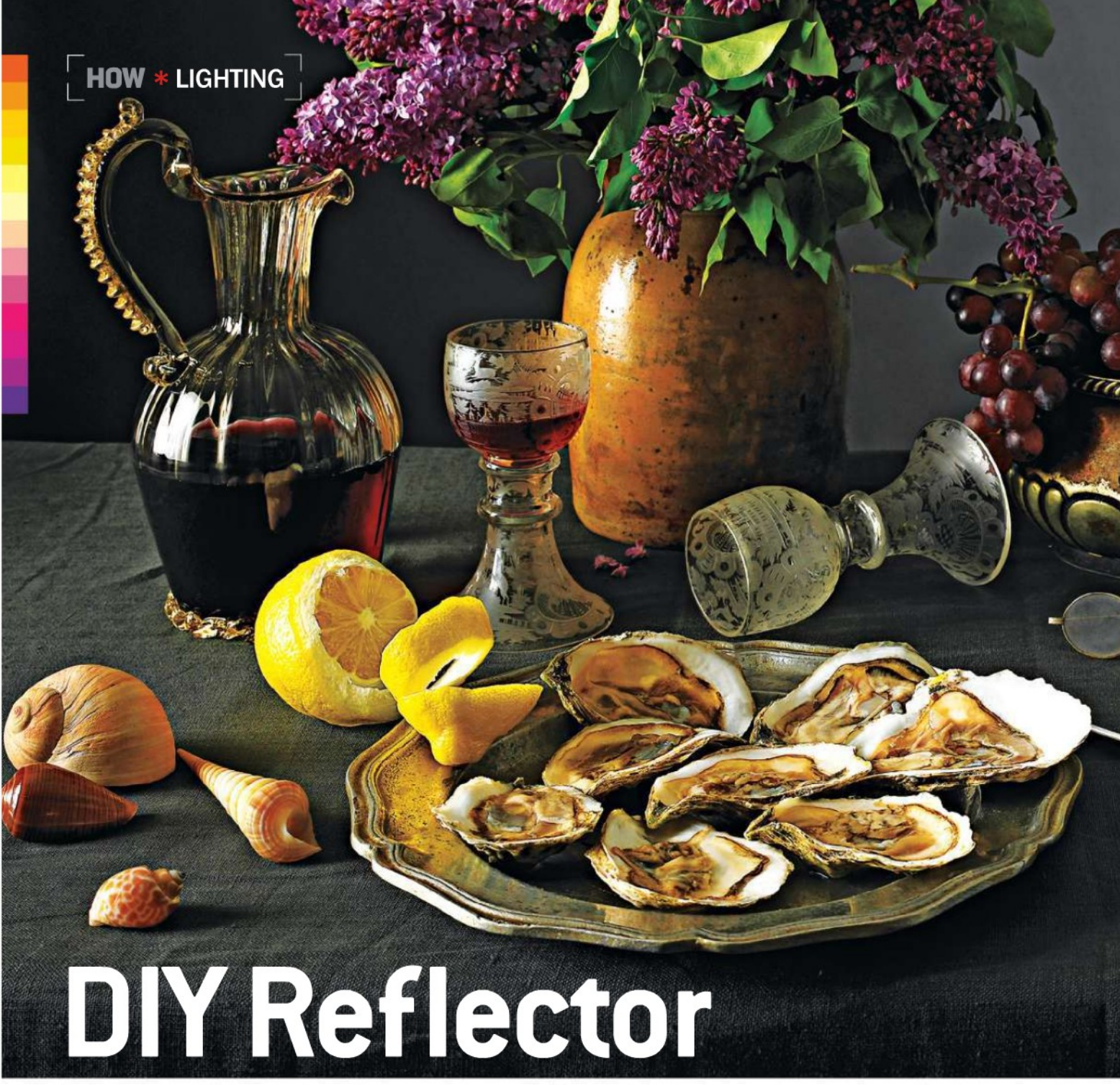


DIY Reflector

A versatile lighting tool you can make at home

YOU DON'T NEED tons of cash to own effective lighting tools—often you can make them yourself. Skip Caplan, a New York product and advertising pro (www.skipcaplan.com), produced a soft, delicate facsimile of window light for this Dutch Masters-style still life by bouncing two strobes into a homemade reflector called a V-card.

A V-card comprises two white reflecting surfaces joined, usually with gaffer's tape, to form a V. Since you can make it very large, it's great for replicating the qualities of window light: The larger a light source, the softer and more window-like the overall result. You can get this effect with a large softbox or beauty dish, but a V-card costs a lot less.

For this "window light" still life, Caplan used an H25 Phase One digital back on a Hasselblad 553 ELX. Exposure, 1/125 sec at f/22, ISO 80.

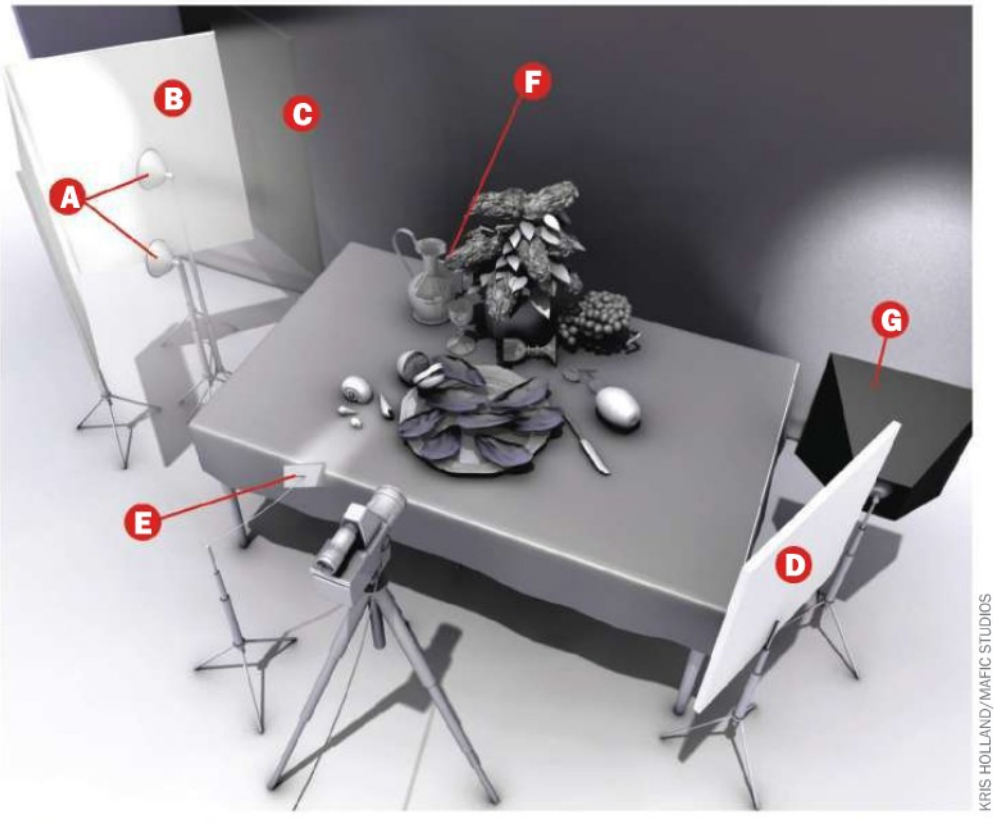
Caplan made his V-card from two 4x8-foot sheets of white foamcore, for a total surface area of 64 square feet. Thicker foamcore sheets are more rigid than cardboard and lighter than plywood, and make the best V-cards. Half-inch-thick sheets are rigid enough that even the largest sizes will stand on their own when joined in a V. Caplan's Nielsen Bainbridge foamcore boards cost about $106, and should last for years.

MAKE YOUR OWN WINDOW LIGHT

SIMPLE ■■■■■■■■■■ COMPLEX

To recreate the broad, diffuse look of window light with artifical sources, New York pro Skip Caplan popped two Comet CB-25 2400 strobe heads (A) into a large V-card reflector (B). A black gobo (C) prevented the main light from spilling onto the background. Caplan used a white reflector (D) to open up the shadowed side of the set, and a small mirror on armature wire (E) to bounce light back onto the sliced lemon. To bring out color in the wine, he placed a small white reflector (F) behind the carafe and goblet. And to add depth to the scene, he partially lit the background with a third Comet strobe head popped through a Chimera softbox (G).

SKIP CAPLAN



KRIS HOLLAND/MAFIC STUDIOS

THE GEAR

Comet CS-2400T power supply **($3,125, street)**

Skip Caplan's V-card **($106 in materials)**

V-cards are very versatile light reflectors. With them you can:

■ **Narrow or broaden the light** simply by opening or closing the V. This gives you great control, comparable to switching from a square softbox to a strip light, but much more easily done.

■ **Control contrast** by moving your lights closer to or further from the center of the V. The deeper strobe heads are placed into the V, the harder the light.

■ **Maximize studio space** because they easily fold up and prop against a wall when not in use.

■ **Save time and money on portrait backdrops.** As Irving Penn often proved, in a pinch V-cards can make quick and easy backgrounds.

Caplan popped two 2400 watt-second Comet strobes into his V-card at full power. This produced a lot of light and let him move the V-card far enough away from the set (about 6 feet) that the light fell off very gradually from left to right. It would have fallen off more quickly if it had been much closer to his subject, as the left side of the tabletop would have received much more illumination than the right.

"V-cards throw a broader, more even light than a softbox or bouncing off a flat reflector—those give off light that's hotter in the center than the edges," Caplan says. "The white highlight in the left pitcher is perfectly even from side to side, with no falloff or central hot spot. Using a conventionally sized softbox, that highlight wouldn't have been so large or so even."

Why didn't Caplan just light this from his large studio windows? "It took me 6 hours to light and style this," he answers. "Window light would have changed too much." *—Peter Kolonia*

KEVIN PIEPER (ORIGINAL)

Pro Level Skills

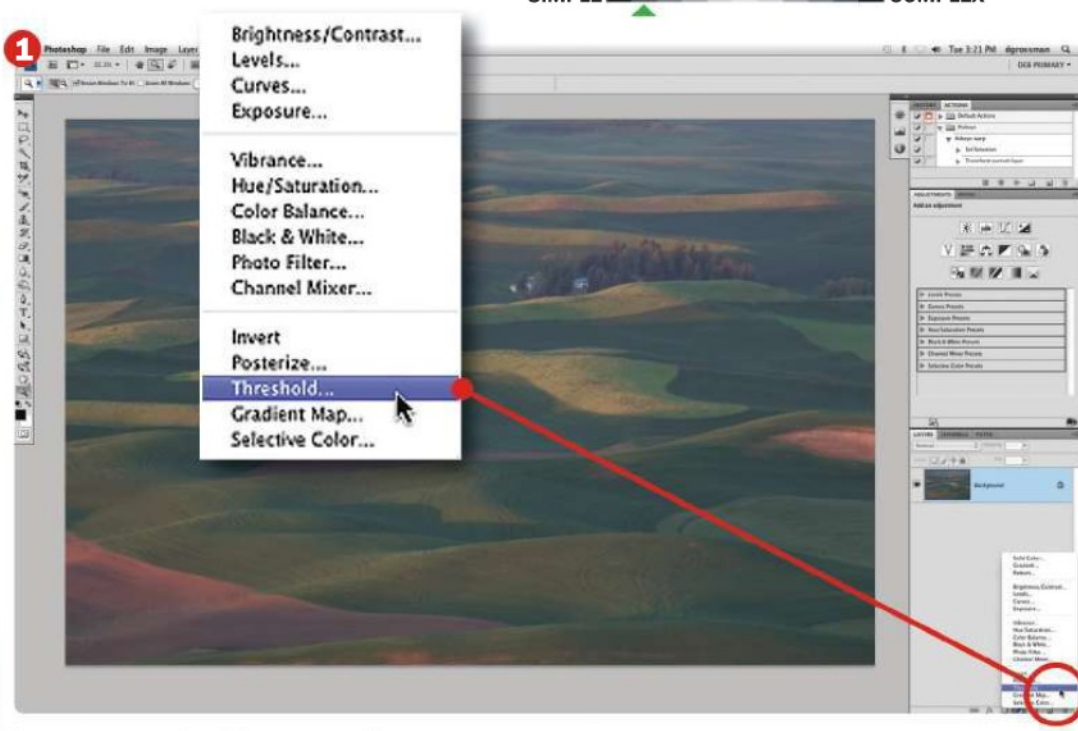
A precise and easy way to fix contrast and color with Levels

A POWER TOOL for fixing low-contrast photos, Adobe Photoshop's Levels can add natural-looking contrast and remove color casts, simultaneously and in a few steps. Rarely are such hardcore, histogram-based corrections as this one so simple to do.

To accomplish it, we'll define, then employ, the proper black and white points (i.e., the darkest and lightest spots) in the picture. By using the histogram to make decisions, you'll get a good, most-likely more neutral result regardless of the color-accuracy of your computer's display.

These instructions are for Photoshop CS4. Though the technique will work in earlier versions of Photoshop, CS4 integrates Adjustment Layers more seamlessly—other versions require you to exit Adjustment Layers and then return to them when you need to switch tools.

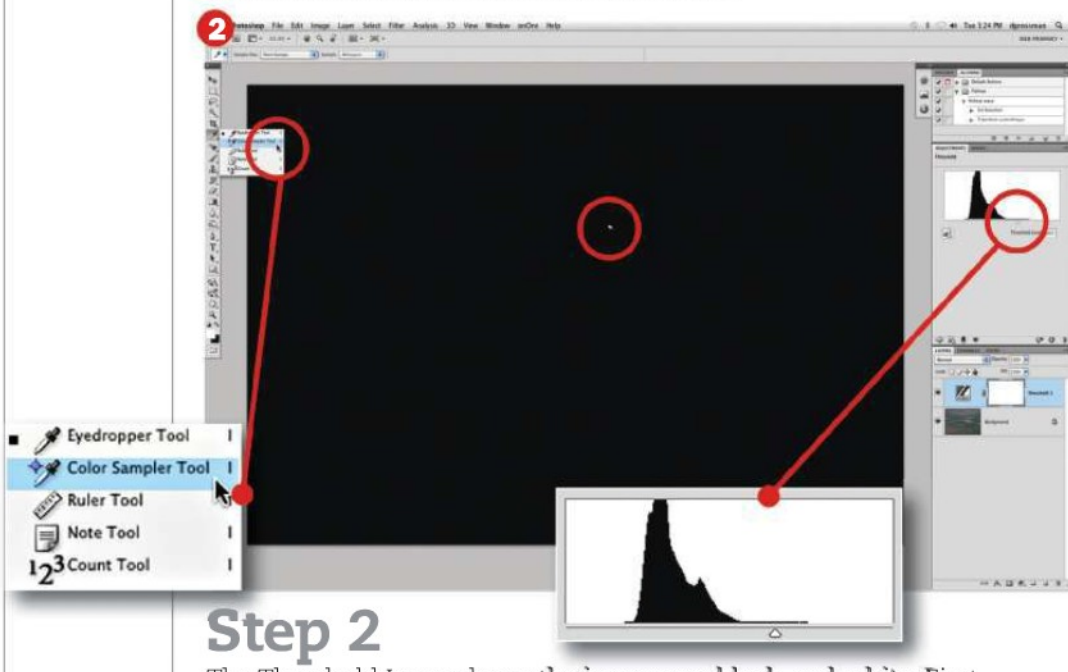
SIMPLE COMPLEX



The original (above) has a greenish cast and needs more contrast.

Step 1

Make a temporary Threshold Adjustment Layer. We'll use it to determine and mark our black and white points for future reference, then toss the layer out. To make one, **click on the Threshold button on the Adjustments Panel,** or, on earlier versions of Photoshop, use the Adjustment Layer menu in the Layers Panel.



Step 2

The Threshold Layer shows the image as a black-and-white. First we'll locate and mark the white point: **Drag the white arrow to the right until only a bit of white remains visible in the image**—this will be your white point. Then go to your toolbar and click and hold on the Eyedropper tool, choosing the Color Sampler tool from the pop-up menu.

F.Y.I.

BLACK & WHITE POINTS AREN'T JUST FOR THE LEVELS TOOL. If you prefer making corrections with Curves, you can still employ the Threshold Adjustment Layer process to find and mark your image's black and white points. Then use the black and white droppers in the Curves dialogue box to begin correcting your image.

If you can find a neutral gray in your image, and if the black and white points don't correct color enough, use the gray dropper in the Levels or Curves dialogue to neutralize your image after you've completed the final step.

Step 3

Zoom into the white spot. **Then use the Color Sampler tool to click on the spot.** This will leave a little target labeled with the number 1 next to it. Now we've marked the white point in the image—the mark will remain until we clear it.

Step 4

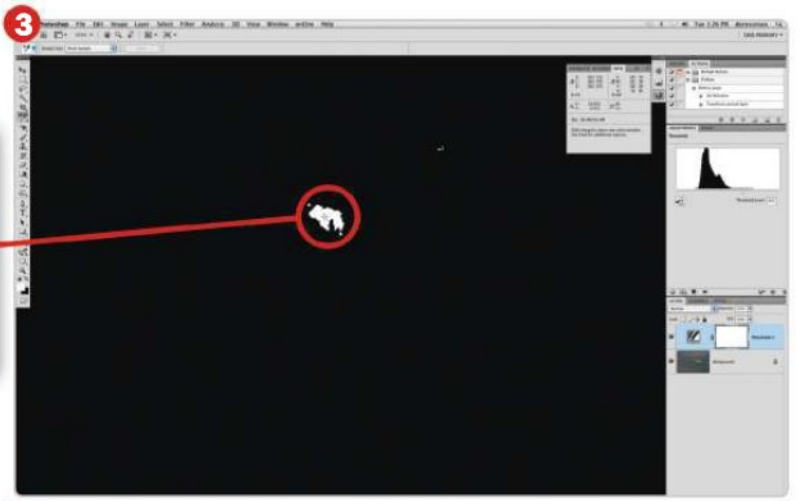
Next we'll find the black point. This time, **drag the little white arrow in the Threshold Adjustment Layer to the left** until you see just a bit of the black. Zoom into a black area, and click again with the Color Sampler to mark the black point with the number 2.

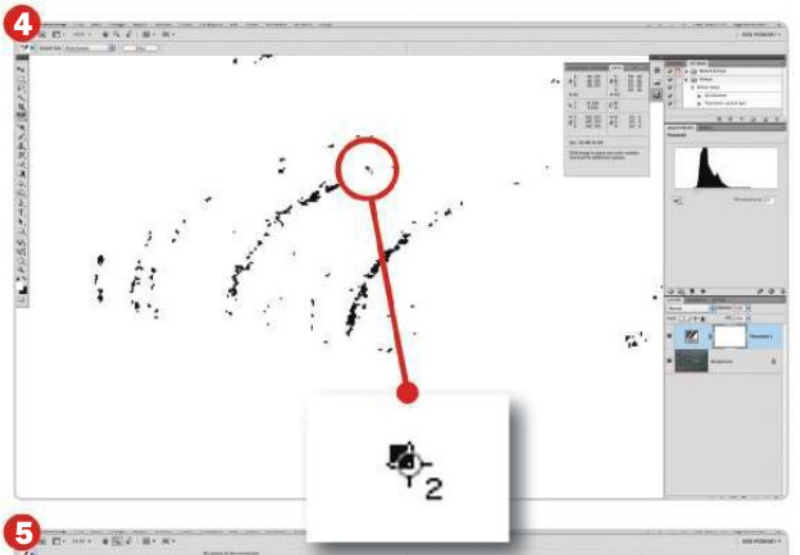
Step 5

Delete your Threshold Adjustment Layer. Note that your point samples remain. **Make a Levels Adjustment Layer and select the white dropper** (circled). Hit the Caps Lock key to turn your curser into a target, and line it up with your number 1 sample. Click and watch your whites get brighter, and your whole image follow suit.

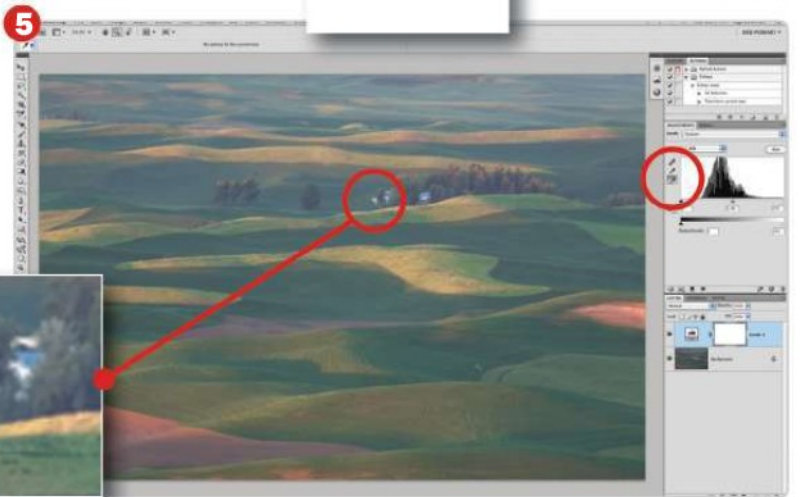
Final Step

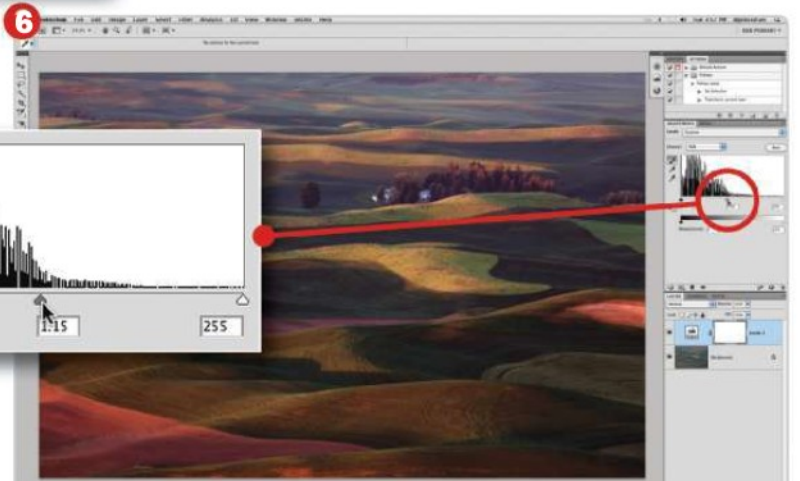
Click on the black dropper (circled), then click on point sample 2. This is where the big change often takes place—decontaminating the blacks to neutralize color and resetting the tones for more contrast. If your image is too dark at this point, move the gray arrow slightly to the left to brighten the midtones.





To clear the point sample markers, select the Color Sampler tool and hit the Clear button in the Options Bar.





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Private Domain Registration	FREE	$9.00/year	–
Search Engine Submission	✓	✓	Extra charge applies
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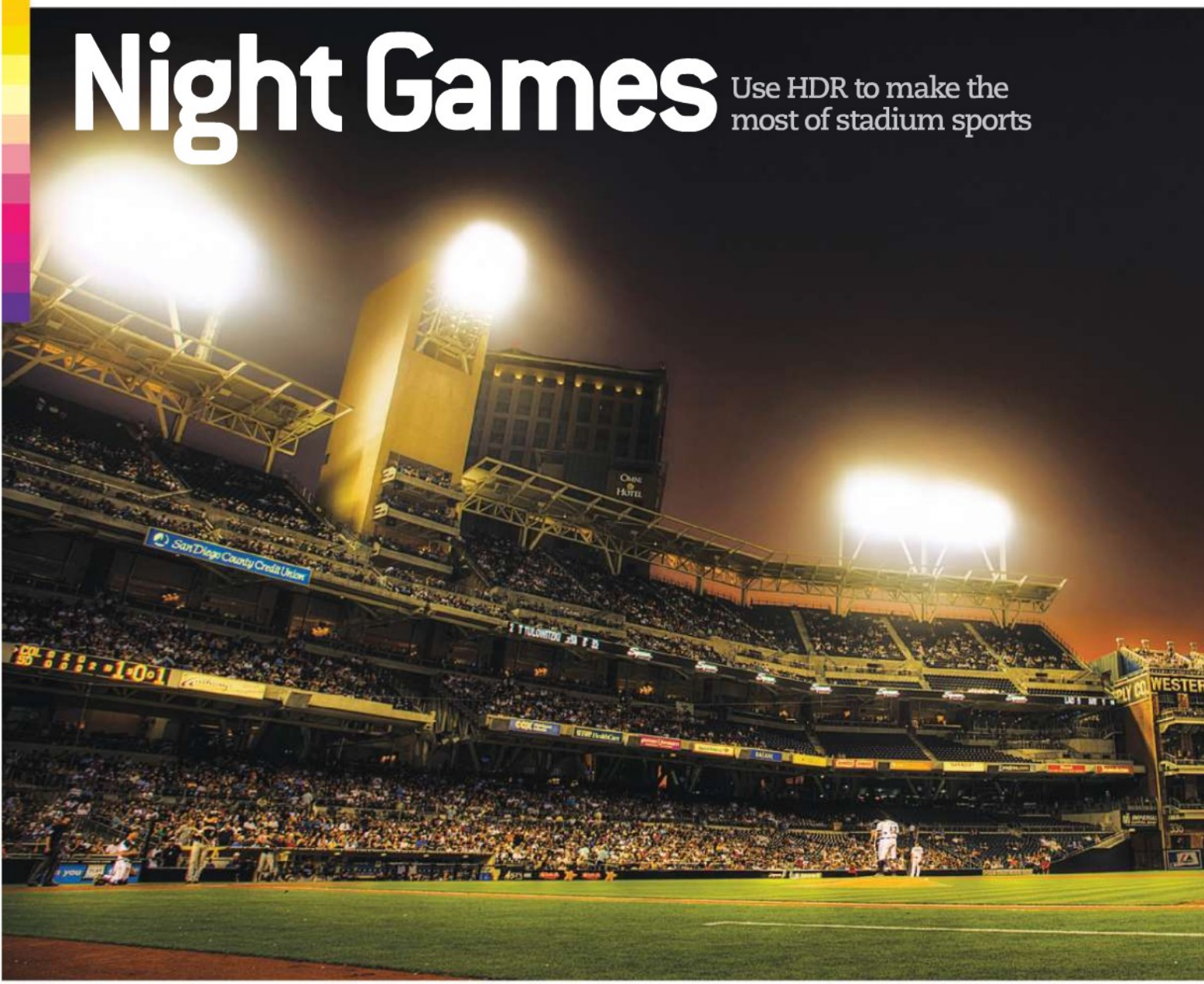


CHRIS PARK

THE BEST HIGH-dynamic-range (HDR) composite images are usually those you can't immediately tell are HDR.

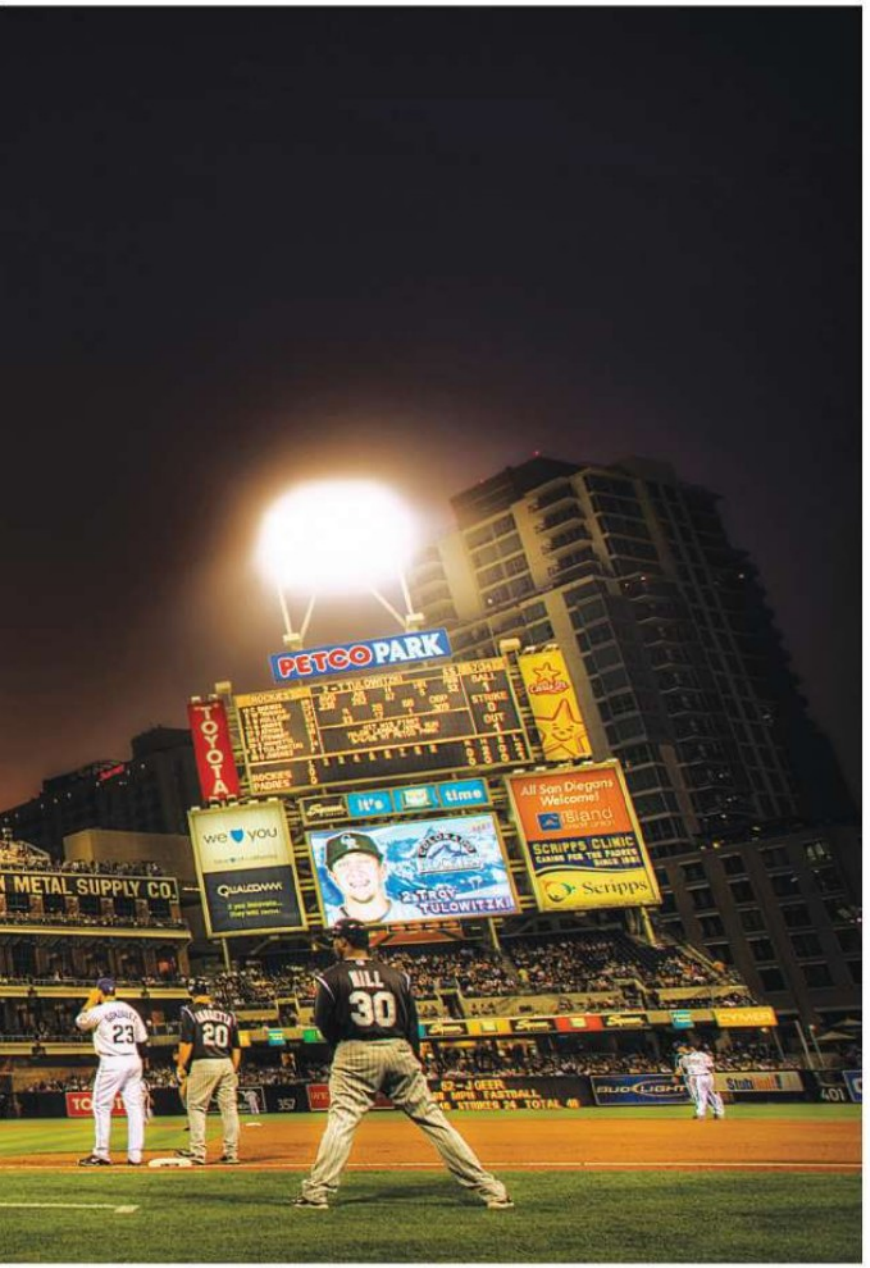
That's why we like sports photographer Chris Park's work so much. As the Associated Press contract shooter from San Diego (www.cparkphotography.com) proves with this three-image composite from a 2008 Padres/Rockies game, HDR doesn't have to look silly or surreal.

Park's approach is particularly well-suited to capturing a high-contrast subject such as a nighttime stadium baseball game. By combining normal, over-, and underexposed images in postprocessing, he conveyed full detail in the brightly lit scoreboard and white uniforms, as well as in the shadowed sections of the stands.

High-dynamic-range images capture a broader spectrum of tones when a single exposure won't do the job.

How did he do it? First, by mastering the basic techniques for covering stadium sports:

- **Using the fastest lenses possible,** but none that are physically too large—many stadiums place a limit on the size of the lens that fans can use.
- **Stabilizing your rig** with monopods for large, long lenses, and bean bags for smaller wide-angle lenses. (Stadiums usually ban tripods from the stands.)
- **Getting great seats.** Field level is expensive, but it's worth it. If there's nothing left at the box office and you really want a shot like this, try scalpers.
- **Roving the stands** for good angles. "Usually my bread-and-butter shots come at field level



Chris Park shot with a Canon EOS-1Ds Mark II and 17–40mm f/4 Canon lens set to 17mm. Exposures: f/7 at 1/60, 1/250, and 1/1000 sec.

When Park's 400mm tele gives him "tunnel vision," he switches to a 17–40mm f/4 zoom (A), which he steadies with a bean bag (B) for long exposures.

along the first-base line," says Park. "But I'm often rewarded when I try different shooting angles around the park. This is especially true during the 'magic hour' of sunset, when the sky can put on quite a light show." —*Peter Kolonia*

Step 1

Shooting for HDR, **use as low an ISO as possible.** You want to keep noise out and sharpness in. That can be difficult if you have to run your files through a noise reduction filter. Park shoots at ISO 100. "The amount of noise at ISO 200 or 400 can be completely unacceptable," he warns.

Step 2

For clean HDR composites, **shoot in RAW and avoid auto white balance**. Your goal is consistent color temperature between the three or more exposures.

Step 3

While shooting, **keep the camera stable** by using a monopod or bean bag, plus a self-timer or a cable release. So that the three images match, wait to shoot until there's a lull in the action.

Step 4

Bracket your brackets. Start with increments of 1/3- or 1/2-stop between each of the three exposures, then reshoot with brackets of 1 and 2 full stops. The three images that comprise Park's photo at left were each 2 full stops apart. In general, smaller increments produce subtler, yet very effective, HDR images.

Final Step

Composite the frames. Park often starts with Adobe Photoshop CS4's Merge to HDR tool, which you'll find in File > Automate. A dialog box asks which images he wants to merge, and then Photoshop creates a single 32-bit file. He saves it as a TIFF file and reopens it in the HDRsoft plug-in Photomatix. This popular program offers a number of preset sliders that give him extensive control over image quality.

Bag the Blooms

GET READY FOR A RECORD-BREAKING WILDFLOWER YEAR

California poppies near Lake Elsinore, CA. Mamiya 645 AFD with Phase One P25+ digital back and 35mm f/3.5 Mamiya lens, paper-plate reflector, bean bag; 1/250 sec at f/8, ISO 100.

Text and photos by Tim Fitzharris

WITH THE HEAVY rain and snow that fell across much of North America over the winter, this spring and summer promise some of the best wildflower displays in years. If your camera has been in hibernation, wake it up and head into the field to capture this burgeoning show of color and form. Here are some tips, techniques, and a handful of top wildflower sites to get you up and shooting.

Fill the Frame

Your first consideration for capturing the rich hues and exquisite shapes of wildflowers is getting close enough. For most species, you'll want to magnify the subject to show good detail in the pistils and stamens, normally the center of interest of the composition.

Any lens with macro-focusing capability will work fine. Otherwise, you'll need an extension tube that fits between the camera and lens, or a close-up filter (actually a supplementary lens) that screws onto the front. Your setup should allow you to fill the frame with the palm of your hand.

Get Intimate

Once you've magnified your subject adequately, the next step is finding a revealing camera angle. The best way? Place the camera at bloom level, usually less than a foot above the ground. Here, you'll capture the background as a blur, bringing singular attention to the sharply-focused main subject and rendering a view normally privy to bees and butterflies.

To keep the camera steady, hang it from the inverted center column of your tripod or plop it onto a bean bag. You can buy commercial bean-bag camera supports or simply fill a one-gallon freezer bag with small dried beans.

Pump Up the Color

For the richest hues, restrict your shooting to the soft light of overcast days. Passing clouds can also diffuse the light, as in the Big Sur shot on the opposite page.

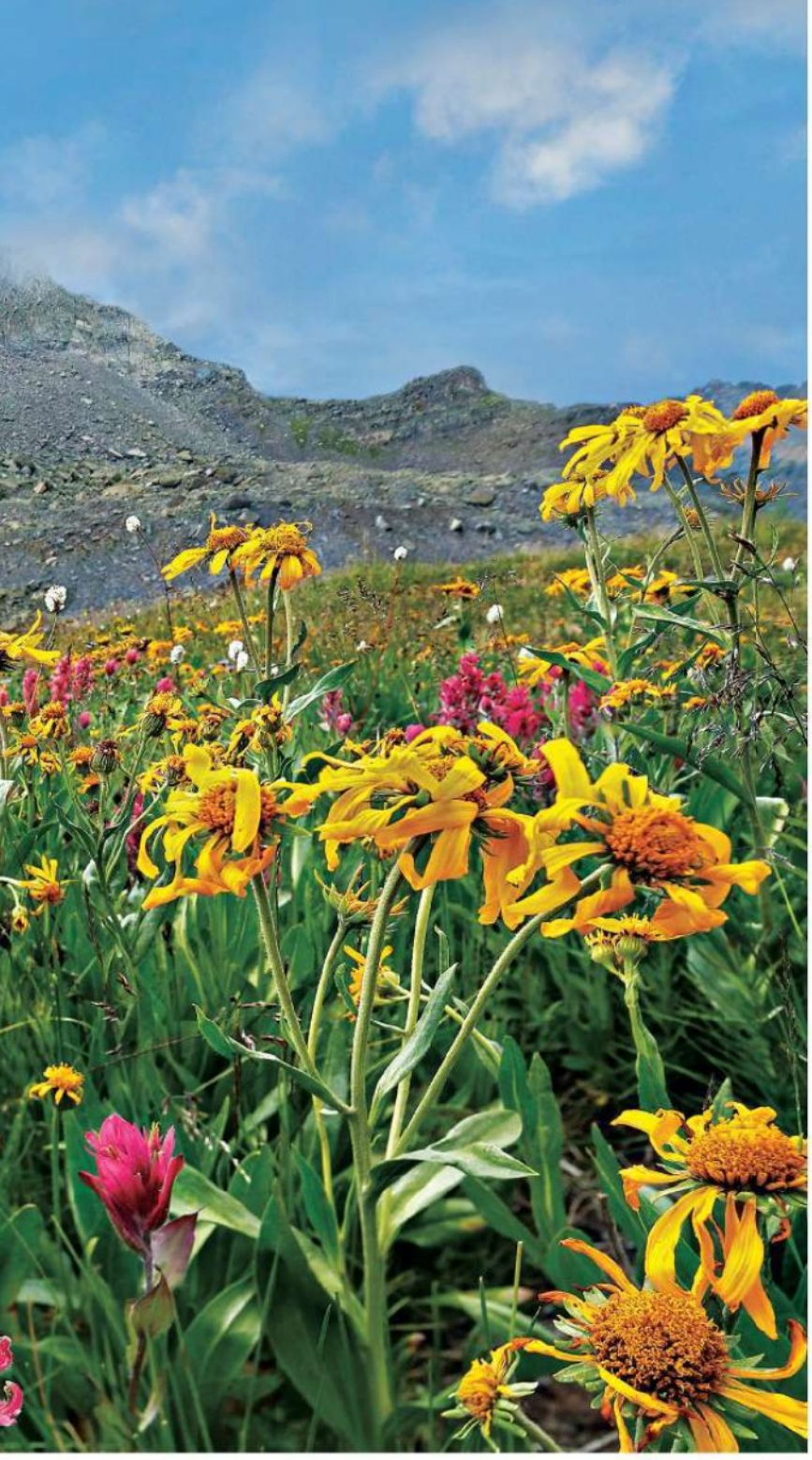
On clear days, good color saturation requires extra care. Work when the sun is low in the sky and shadows are softer. But don't start too early or too late—if the sun is near the horizon, the scene takes on an unnaturally warm color cast that robs greenery of its fresh look.

Use a small white reflector to throw light into the shadow side of the subject. This compresses the dynamic range of the scene and produces stronger color in both shadows and highlights. A paper or foam picnic plate makes a perfect reflector for most floral portraits.

▲Paintbrush and sneezeweed at Mendota Peak, CO. Canon EOS 5D Mark II, 24mm f/3.5 Canon TSE lens, tripod, and reflector; 1/250 sec at f/11, ISO 640.

Airbrush With a Tele

Use the limited depth of field of a telephoto lens (300mm equivalent or longer) to generate attractive color blurs that compliment the main subject. Control the size, position, and transparency of these patches of color through your camera angle, focal length, camera-to-subject distance, and camera-to-background distance.



▲**Gaillardias and asters near Santa Fe, NM. Tripod-mounted Pentax 645 with 45–85mm f/4.5 Pentax lens; 1 sec at f/22 on Fujichrome Velvia 50 through polarizer.**

▲**Paintbrush at Big Sur, CA. Tripod-mounted Pentax 645 with 35mm f/3.5 Pentax lens; 1/5 sec at f/16 on Fujichrome Velvia 50.**

Placing the camera at or near the height of the blooms also works best with this technique. Set up on a tripod in its collapsed position, or stabilize the camera on a couple of bean bags—one for the camera and one for the lens.

Try different combinations of focal length and camera position to come up with the best possible composition for your subject.

Shoot the Breeze

Wind is the magic ingredient for capturing abstract splashes and streaks of silky floral color, as in the photo at upper right. Fill the frame with an expanse of blooms the size of a tabletop or larger.

The amount of blur is determined by the interaction of flower movement and exposure time. A light breeze may require an exposure of several seconds or longer, even at your lowest ISO (unpack your neutral-density filters). With a stiff wind, 1/15 sec does nicely.

Once you have a composition to study on your LCD screen, modify shutter speed to create just the dreamy effect you want.

Take Low-Altitude Aerials

Given the small size of wildflowers, you can take "aerial" photos without having to rent an airplane. Simply position the camera high, with the lens aimed straight down. Your best tool is usually a zoom lens with macro capabilities.

Set up the tripod so that the camera projects over the flowers far enough to keep the legs out of the viewfinder—tripods with an extendable boom work well for this.

Look for a flower patch with blooms growing at the same height so that edge-to-edge sharpness results with minimal stopping down of the lens. Let the

flowers suggest your compositional approach. Strong designs result from working with just a few main blooms, as in the photo above.

Leave Blue Skies Behind

Although sunny days may produce excessive contrast in wildflower photos, you can compensate for this by bringing blue sky into the background, as I did in the photo of California poppies on the opening spread. No hue creates a more upbeat feeling when coupled with the complimentary yellow, pinks, and oranges of wildflowers.

You'll need to set the camera a little below blossom level or shoot across a hillside for this. By using the restricted field of view of a telephoto lens, you can angle for an intense cloud-free patch of background blue and at the same time achieve the shallow depth of field needed to accentuate the center of interest.

Sego lilies at Canyonlands National Park, UT. Pentax 645. 45–85mm f/4.5 Pentax lens, and extension tube on tripod; 1/30 sec at f/11 on Fujichrome Velvia 50.

Highlight High Noon

"Avoid shooting during the harsh light of midday" is a mantra that you can ignore when shooting wildflowers that have translu-

CONTINUES ON PAGE 116

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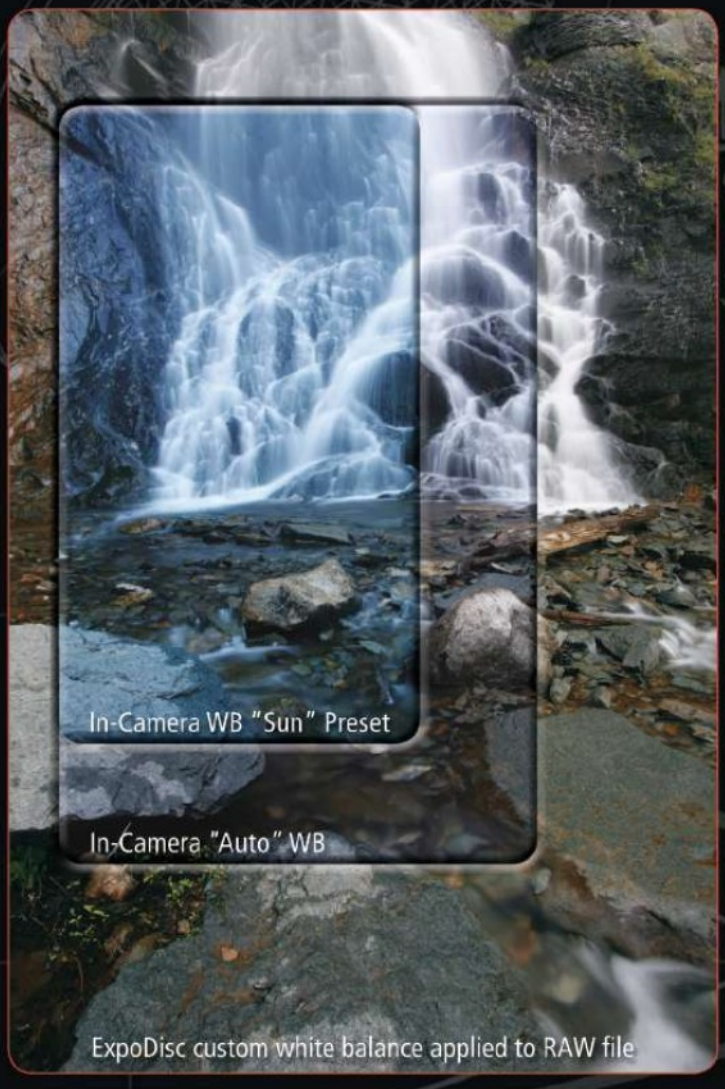


ExpoDisc custom white balance applied to RAW file

How are ExpoDiscs tested and why does it matter?

The accuracy of a custom white balance depends upon the neutrality of the tool used to set the white balance. To get the best possible color in your images, your white balance tool must be neutral in the visible spectrum (400nm to 700nm).

As inventors of the Digital White Balance Filter, we have always gone to great lengths to ensure the neutrality of every ExpoDisc. We assemble, test and calibrate every ExpoDisc for 18% light transmission and neutrality in the visible spectrum using a sophisticated transmission spectrophotometer at our facility in California.

Because we've found that no single material is consistently neutral from one batch to the next, the ExpoDisc's design incorporates multiple layers of color correction and diffusion filters, allowing us to compensate for variations and to consistently produce products that are extremely neutral. Without individual testing, no tool can consistently guarantee neutrality due to the inevitable variations in the color and density of the materials.

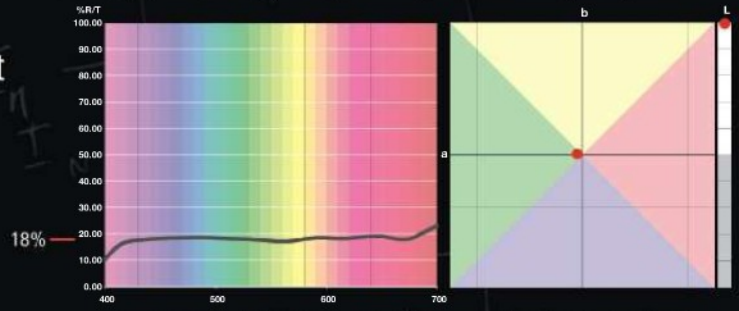
Setting a white balance with a non-neutral tool will introduce a color cast to your images. What's the point of setting a custom white balance if your tool introduces a color cast in the process?

Trust ExpoDisc to capture the color you see.

"I've tried multiple ways of setting a custom white balance. The ExpoDisc is by far the most simple, consistent and user friendly."

Les Voorhis, Professional Nature Photographer, May 2007.

ExpoDisc representative Lab values: L*=49.90,a*=.-0.26, b*=0.17, Z%=18.25. These representative Lab values were produced by measuring light passing through an ExpoDisc using a transmission spectrophotometer.



Representative Visible Spectrum Profile

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www.expodisc.com

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THE BEST

TOP TRAVEL PHOTOGRAPHERS REVEAL THEIR FAVORITE DESTINATIONS IN THE WORLD

OJAI VALLEY, CA Just inland from southern California's striking Pacific coast, the Ojai Valley is an excellent base for exploring the coastline and the nearby Los Padres National Forest. "It's photographically cool because it runs east/west instead of the usual north/south," says Glenn Oakley. "For really great light, you can shoot straight down the Valley into a rising or setting sun, exactly as I did here." (www.ojaichamber.org)

GLENN OAKLEY

By Peter Kolonia

PLACES TO PHOTOGRAPH

WHERE TO TAKE your camera next? We asked more than two dozen professional travel photographers to tell us their favorite places in the world to shoot and why. Their top 20 picks, listed on page 63, include some you'll find on any traveler's list, plus a lot of surprises.

Our globetrotting pros cited a handful of factors that make a destination perfect for photographers: colorful and dramatic scenery, unique cultural details (dress, market goods, architecture), friendly people who aren't camera-shy, predictable weather with good natural light, and relatively easy access to transportation.

Here are their specific shooting strategies for all of the places on this list (except the Guilin region of China, which is covered in Editor's Letter, page 6). See the article on 68 for their tips for great travel photos no matter where you go.

HONG KONG
"This is a magical city," says Gregory Allen. "There's both hyper-modernity and traditional Chinese culture to photograph." The temple in his photo is filled with spirals of burning incense. "The red papers carry prayers and wishes, which are said to be granted when the spiral has burned completely in about 10 days," he explains. "The deep reds and golds made it a very colorful subject." (www.discoverhongkong.com)

GREGORY ALLEN

KEVIN DYER/A WORLD IN FOCUS

SAGARMATHA PARK, NEPAL
This national park is home to many of the world's highest peaks and some of the most beautiful, including Ama Dablam (right). "Few places have such quantity and quality of photographic opportunity," says Kevin Dyer. The colorful prayer flags that frame the mountain are one example. "Buddhists write prayers on them, which they believe the winds carry skyward to the ears of the gods." (www.visitnepal.com)

Iceland's Coastline

"Of all the places in the world I regularly travel to, Iceland has the most unusual land- and seascapes," says Ron Rosenstock. "Working there is like photographing when Earth was just being formed. It's known for its rainbows and waterfalls, as well as lava fields and black sand beaches."

The light along the coast makes for fantastic images, and its changeability means you must always be ready to grab a camera.

Susan Delgado agrees that Iceland is a distinctive photo destination. "We circled the entire island by car in one week and experienced a wide range of natural beauty: glaciers, waterfalls, volcanoes," she says.

- **Must-get shots:** Coastal sunrise and sunsets.
- **For info:** www.icelandtourist board.com.

India: Kerala and Rajasthan

Four pros described their amazement during travels in India, especially in two states on opposite ends of the subcontinent: Kerala in the south and Rajasthan (the largest in area of India's 28 states) in the north.

Says Jonathan Kingston, "South India has color and light, welcoming people, wonderful architecture and landscapes, and many interesting festivals," he says. "You could spend a lifetime trying to capture South India and barely scratch the surface."

He suggests booking a houseboat cruise on the Malabar coast along Kerala (www.keralahouseboat.co.in) to "tour the rivers, lakes and canals of the region. You'll find places few Westerners ever see."

Up north, Charles Harris says, "Rajasthan gets you well away from the masses of Mumbai and Delhi. Jodhpur's buildings are bathed in blue; Jaipur, the state capital, is known as the Pink City."

He adds, "India can be life-changing. It's visually overwhelming, so you have to narrow your focus if you want to maintain sanity. It's practically an alternate reality."

- **Must-get shots:** Jodhpur's Umaid Bhawan Palace, one of the largest royal palaces in the world. Kerala's 10-day Onam harvest festival, held in August or September each year.
- **For info:** www.incredibleindia.org.

20 FAVORITE DESTINATIONS THE PROS' TOP TRAVEL PICKS

COUNTRY OR REGION	SPECIFICALLY	GO FOR THE...
BRITISH ISLES	Isle of Man	Quaint scenery, quiet atmosphere
CHILE/ARGENTINA	Patagonia	Breathtaking mountains, glaciers
CHINA	Guilin Prefecture	Otherworldly landscapes
	Hong Kong	Contrasting modern and traditional city life
GREECE	Santorini	Blue-domed churches and even bluer seas
GUATEMALA	Antigua and Tikal National Park	Religious festivals, ancient Mayan architecture
ICELAND	Coastline	Waterfalls, glaciers, volcanoes, extraordinary light
INDIA	Kerala	Water-filled landscapes, captivating festivals
	Rajasthan: Jodhpur and Jaipur	Colorful cities filled with street life
ITALY	Tuscany	Classic towns and countryside–and food
MOROCCO	Casablanca, Marrakesh, Tangier	Dramatic landscapes, architecture, markets
NEPAL	Kathmandu	The colorful street life set against the Himalayas
PERU	Machu Picchu	Magnificent ancient architecture, mountains
SWEDEN	Stockholm	Picturesque city with access to wilderness
UNITED ARAB EMIRATES	Abu Dhabi and Dubai	The amazingly modern architecture
UNITED STATES	California: Ojai Valley	Sunrises, sunsets, and the cypresses
	Hawaii: Molokai	Pristine tropical scenery, seaside cliffs
	Montana: Flathead Indian Reservation	Pow-wows, rodeos, wildlife, cloudscapes
	Washington: Olympic Peninsula	City, mountains, seaside, forest—rain or shine
	Wyoming: Grand Teton National Park	Gorgeous nature shooting, outdoor sports

Isle of Man

"A small island in the Irish Sea, it is also an island in time, intensely reminiscent of an Ireland from years ago," says Gail Mooney. "While not overly exotic to the eye, the place pulled me in with its subtle magic from the moment I arrived. Its heyday was the Victorian era, which left behind quaint seaside villages that seem untouched by the modern era. The villages are connected by a steam-powered train that traverses the island, leaving wonderfully picturesque puffs of smoke across stunning landscapes."

She suggests walking around the circumference to get a feeling for its diversity. "Ride the steam train for different views, and try to arrange your stay to include the Tourist Trophy, or TT—Europe's major motorcycle race, which transforms the island into an action-packed spectacle."

- **Must-get shot:** Rocky seascapes silhouetted against a rising or setting sun.
- **For info:** www.isleofman.com.

CHRIS MCLENNAN

CHARLES HARRIS

Italy: Tuscany

Travel photographers love Italy for the same reason tourists do: "It has it all," Charles Harris says. And the hands-down favorite region is Tuscany for its mix of landscapes, architecture (cities and villages), and, not least, food.

Says Ron Rosenstock, who leads photo tours there, "Not only can you walk down the same streets as DaVinci and Michelangelo, but you can see almost the same scenes."

In Florence, he recommends getting up before dawn and hitting the streets at around 5 a.m.: "Early morning provides unusual and dramatic lighting effects. The streetlights are still on and sidewalks are pedestrian-free. Photographing in Florence's predawn silence is like a meditation."

He advises a similar strategy in the Tuscan countryside. "In the vineyards, I'm generally out with my camera just as dawn begins to break. It's a very soft light that reveals texture and color that will disappear as soon as the sun burns through the softening mists."

- **Must-get shots:** The rolling hills, historic villas, and Italian cypress trees of the Orcia Valley.
- **For info:** discovertuscany.com.

ANTIGUA, GUATEMALA
"A charming village with cobblestone streets and old-world Spanish architecture, Antigua is also home to Holy Week events," says Charles Harris. "There are nonstop mysterious processions throughout." (www.aroundantigua.com)

SANTORINI, GREECE
"The architecture here is like no other place on earth," says Chris McLennan. "It's overwhelming when you see it for the first time." The bars and restaurants of the Santorini village of Oia fill to capacity as tourists gather late in the afternoon to cheer the setting sun. "It's like New Year's Eve, only every night." (www.santorini.net)

Machu Picchu, Peru

This ancient Incan city, nestled in the creases of the Andes, is a familiar favorite—for good reason. "It's magnficent," says Gail Mooney. "I spent most of my first morning watching as clouds and mist enveloped the mountain peaks, and shafts of light streaming through holes in the fog, struck the walls, making it suddenly appear spotlit. I felt like I was discovering it for the first time. I visited for three days, and the mood of the landscape changed daily."

- **Must-get shots:** The citadel in the early-morning mists.
- **For info:** www.machupicchu.org.

Molokai, Hawaii

"The island belongs to another era—it's what I imagine the old Hawaii was like before becoming a major travel destination," says

CHARLES HARRIS

Jonathan Kingston. "The pace of life is slow, the people are friendly, development is minimal, and it has a variety of climates and landscapes, with some of the most pristine tropical scenery in Hawaii."

Molokai's sea cliffs are the world's tallest. Rent a four-wheel-drive vehicle—much of the island is accessible only by dirt roads. Also try a mule train tour (muleride.com) along those towering cliffs.

- **Must-get shots:** Seascapes at Kalaupapa National Historic Park.
- **For info:** molokai-hawaii.com.

Montana: Flathead Reservation

A few miles northeast of Missoula, this Native American reservation is a favorite destination of Montanan Pam Voth. Its diverse photo opportunities include annual pow-wows and rodeos, wildlife in the National Bison Range and Ninepipe Wildlife Refuge, the historic St. Ignatius Mission, and breathtaking mountain views.

"At Ninepipe, look for the wildlife area off Highway 93 for shots of waterfowl," she advises. At the National Bison Range, on any one of the driving loops, "look for elk, deer, coyotes, black bears, big horn sheep, pronghorn and, of course, bison. Be prepared to photograph from the car as visitors are not allowed to leave their vehicles in most areas," though you can generally step out to set up a tripod.

- **Must-get shots:** Landscapes along Red Sleep Mountain Drive.
- **For info:** www.visitmt.com.

Morocco

This North African country is such a favorite that we couldn't get a consensus about exactly where to go—our experts insisted that you leave plenty of time to see the whole country. A colorful explosion of influences, architecture, and peoples, "it's a land of intense contrasts and can provide nonstop sensory experience," says Ron Rosenstock.

"You can photograph in the sand dunes of the Sahara in the morning, and in the snow-capped Atlas Mountains in the afternoon. And it feels like Biblical times. It's exotic and picturesque, yet comfortable for Western travelers."

He suggests concentrating on the details of architecture, daily life, and nature. "The way goods are displayed in the market, the way light falls on archways, and the texture and color of plants in a garden or oasis form powerful inspirations for great photography."

- **Must-get shot:** The Hassan II Mosque in Casablanca.
- **For info:** www.visitmorocco.com.

CONTINUES ON PAGE 118

DUBAI, UAE

"Dubai is one of the most unusual places I've been. There's exciting new architecture everywhere you look," says Charles Harris, "yet just outside the city are small villages, mud huts, camel herders, and desert." For this photo, Harris hired a model, asked her to dress in traditional garb, and headed out of Dubai into the nearby desert dunes. (www.dubaitourism.ae)

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TIPS FOR BETTER TRAVEL PHOTOGRAPHY

BRING HOME GREAT SHOTS NO MATTER WHERE YOU GO

By Peter Kolonia

MARK SEGAL

IN THE COURSE of interviewing more than two dozen professional travel photographers, we picked up some advice. Here are their best hints for the journey—and photos—of a lifetime.

DOING YOUR RESEARCH

- Learn as much as possible. Start with the tourism website of the destination that you will visit.
- Read the *Lonely Planet* guide for your destination, then try to avoid the must-see places it recommends. They will be swimming with tourists.

●Search Flickr.com to see what other photographers are shooting at your destination.
●Despite the previous three tips, your best research will happen when you hit the ground at your destination. Whatever you learn prior to traveling will be secondary to the sources you will find there.

GOING AND STAYING THERE

●Visit at the right time, and find out—by speaking with locals—what "the right time" is.
●Couchsurfing.org and SERVAS International (joomla.servas.org) are home-stay and hospitality exchange services that can help you find free lodging all over the world.
●When booking rooms in dicey locations, ask if the hotel offers a safe place for storing gear.
●Search for hotels that are centrally located, near potential subjects, offer a view from your room, and have a roof deck. If you're staying for several days, try switching rooms—even hotels—nightly for better views.
●To avoid forgetting battery chargers or laptop cables, set them next to your car keys, wallet, or purse—never on the floor.

WHAT GEAR TO PACK

●Most of the photographers we interviewed travel with surprisingly similar kits: a full-frame DSLR, f/2.8 ultrawide zoom lens, image-stabilized 70–200mm f/2.8 zoom, 2X teleconverter, lightweight carbon-fiber tripod, electronic cable release, and portable storage device for backing up image files.
●Try to bring a backup camera body, preferably one that's identical to your primary body. Working with different button configurations is confusing and inefficient at best, and disastrous at worst. In many foreign countries, cameras are significantly more expensive and often outdated compared to what you get in the U.S. Having a camera body overnighted to you can incur hundreds of dollars in local customs tariffs.
●A camera poncho like the Aqua Tech SS-Sport Rain Cover will keep you shooting in wet weather.
●Bring lenses that suit your subjects. If you're visiting mainly cities, wide-angles will be more useful than telephotos.
●Collapsible reflectors are better than flash units. They don't depend on batteries, they fold up flat, and they produce a softer, more flattering light. They also show their effects in real-time and can be slowly adjusted for nuanced changes of direction and intensity. Of course, you'll generally need to have someone else hold the reflector, but enlisting the aid of a nearby local often can pay off in unexpected ways.
●Use many smaller memory

Mark Segal, who specializes in panoramas, says the best time to capture popular tourist sites such as Venice's Piazza San Marco (above) is to get there before the tourists do. "Rise before the sun and wait for good light and just a few people," he says. "Leave when the masses arrive."

CHARLES HARRIS

cards (2GB) instead of a few large cards. That way, if you lose one or it becomes corrupt, you haven't lost too many images.

- Bring a digital compact for when a larger camera isn't practical. A Canon PowerShot G11 or Panasonic Lumix DMC-FH1, for instance, can be invaluable for situations in which the noise of the shutter is inappropriate. Waterproof compacts such as the Pentax Optio WS80 are perfect when the weather isn't.
- A small digital voice recorder such as the Olympus WS-400S can help capture ambient sounds, interviews, and notes or reminders to yourself.
- For remote destinations where your subjects may never have seen a photo of themselves, a pocket-sized, battery-powered printer like the Polaroid PoGo can build trust, gain cooperation, and open doors.
- Energy bars and bottled water will let you keep shooting through the lunch hour. Why waste time eating?

SHOOTING STRATEGIES

- Don't stop shooting just because it's wet outside. The time right before and after rain can produce amazing light and more saturated color.
- Try to plan your day and shooting schedule based on your subjects' positions relative to the arc of the sun.
- Get up early to be photographing as the sun is rising. Use midday for napping or location scouting. Start shooting again in the mid- to late afternoon.
- Return multiple times to the best locations to capture them in different light and weather.
- Don't hurry. It's better to capture a few places well than many places superficially.
- Stay patient and focused. Travel can be distracting and overwhelming. Creating a "mood board" can keep you on track: Cut and paste some inspiring photographs or pictures of artwork onto a piece of paper. Keep it folded in your pocket or bag. If you find yourself lost or drifting, pull it out to help regain focus and a sense of mission.

According to Charles Harris, the secret to good travel photography is simplicity—the fewer elements in your frame, the better. "For this picture, made in the tea fields of central Rwanda, I waited for groups of workers to thin down to a few colorfully dressed women, and then made my shot," he says.

RELATING TO SUBJECTS

- Learn a bit of the language spoken in the places you visit. The more obscure the language, the more you'll be rewarded for any efforts you make to commit words and phrases to memory.
- An effective and affordable way to learn a language is through an exchange (www.mylanguageexchange.com): You teach people your mother tongue while they teach you theirs.
- The single most important trick for getting better photos is connecting with people at your destination and using them as resources. If you have no human contact there, you may get a great landscape or architectural photo, but you will rarely feel that you've captured the soul of a place.
- Politeness and good manners will get you better people pictures than the highest-tech cameras and lenses.

TRAVEL SAFELY

- Get a web-based (not server-based) e-mail account. Attach scans of all your important documents (passport, credit cards, driver's license, hotel and airline reservation numbers, etc.) to an e-mail and send it to yourself.
- Before traveling internationally, visit the U.S. State Department's website and check the Traveler Alerts.
- Women, in particular, should consider carrying their gear in a large, leather hobo-style bag rather than a conventional camera bag. It may attract fewer thieves.
- Purchase travel insurance such as Global Rescue.

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Flashpoint tripods feature European styling. They open and close with ease and have leg locks that really lock solid. Legs are multi-positionable and with the low center column, the tripods can be used for low, ground-level photography. Leg ends are rubber tipped and have retractable spikes.

BALL HEADS: Made of magnesium alloy. stronger and less weight than standard aluminum ball heads.

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Tripod F-1328	63-3/4"	21.65"	24.2 lbs	3.96 lbs	$269.95	$259.95
Tripod F-1428	72"	24"	26.4 lbs	5.72 lbs	$324.95	$314.95
Monopod 2560	55.11"	18.75"	11 lbs	10 oz.	$89.95	$84.95
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Glimbal Head 1	8.26	-	15.4 lbs	2.2 oz.	$279.95	$239.95
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AUTHORITATIVE TESTS, REVIEWS, AND BUYING ADVICE

HANDS ON

MICRO FOR THE MASSES

Olympus looks for mainstream appeal with its newest Pen

THE THIRD TIME'S the charm. With the Pen E-PL1 ($600, with 14–42mm f/3.5–5.6 lens), Olympus has finally gotten it all together in a Micro Four Thirds camera: plenty of pixels, attention-grabbing size and styling, and a built-in flash that lets you add light to your scene even when using an accessory electronic viewfinder (EVF).

But perhaps even bigger news is the introduction of two new Micro Four Thirds lenses. Together, the new 9–18mm f/4–5.6 M.Zuiko Digital ED ($700, street) and 14–150mm f/4–5.6 M.Zuiko Digital ED ($600, street) cover a 35mm-equivalent range of 18–300mm—almost 17X.

Both employ the new Olympus inner focusing design, which shifts a single lens element near the middle of the lens to achieve focus. This smaller element can move faster and more quietly than the

OLYMPUS PEN E-PL1

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PETER KOLONIA

Including the two new lenses Olympus has announced (shown in prototype, off the camera), the Pen E-PL1 will cover an equivalent focal length range of 18–300mm and cost less than $2,000.

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While the remarkably fine-grained VF-2 electronic viewfinder was included in the Pen E-P2 kit, you'll have to spend another $280 if you want to use it on the E-PL1.

elements in earlier Micro Four Thirds lenses, a particular help when you're shooting video.

Handling and Controls

The camera body, while more utilitarian than sleek in design, maintains an attractive rangefinder look. Boxier than the first two Pens, it provides a prominent grip that feels more solid in the hand.

The LCD is smaller—now 2.7 inches, down from 3—and the mode dial moved to the right-hand side. Both changes seem to be concessions to accommodate the pop-up flash, a feature notable by its absence on the previous Pens. We're willing to accept the smaller screen for this convenience, particularly since the pop-up can control Olympus accessory flashes wirelessly.

With the mode dial on the right, it's possible to change almost any setting with just one hand. To make such changes faster, the menu navigation buttons also give you access to functions such as bracketing and drive mode. People moving up from compacts will likely find these controls more intuitive to use than those on a more advanced DSLR.

Since such photographers probably also want to shoot movies, they'll appreciate the dedicated video button—just tap the red dot, and you're recording. The E-PL1 can record at up to 1280x720p at 30 frames per second and stores the footage as Motion JPEG AVI files.

A new Live Guide interface, active only in iAuto mode, attempts to simplify settings such as aperture and shutter speed by asking whether you want the picture to be brighter or darker, or whether you want a sharper or softer background. This should be a boon to people who aren't familiar with

FUTURE TESTS WILL REVEAL . . .

- How the camera handles in the field.
- If the E-PL1's res can match its siblings.
- Noise level of images at high ISOs.
- Whether Olympus has sped up the AF.

If you want a stereo mic input, you'll have to buy the EMA-1 adapter ($280, street) that fits the E-PL1's hot-shoe and accessory port. This comes with a T-shaped stereo mic, extension cord, and clip.

photography's technical terms. And if you don't want to think, iAuto can set everything for you.

Fans of scene modes will find 19 of them, and for those who want to get fancy, there's in-the-camera panoramic stitching and six Art Filters, including a new one called Gentle Sepia.

In our limited time with preproduction samples of the Pen E-PL1 and 9–18mm lens, we were impressed. Focusing was a bit faster than on previous Pens and much faster than on most compact cameras—and, with the new lens, very quiet.

We did miss the tiny vertical command wheel and rotating ring around the control pad that are on the backs of the E-P1 and E-P2, which we found faster for controlling the camera than the buttons on the E-PL1.

When Size Matters

These changes highlight the major advantage of the Micro Four Thirds system: compactness. An E-PL1 body, the two new lenses, and the optional EVF ($280, street) can all fit in a modest-sized purse or bag.

Sure, it's still more to carry than an all-in-one superzoom. But, with a sensor nearly 10 times the area of a typical superzoom's, a Micro Four Thirds camera can produce images that put those cameras to shame. While you won't get the extreme one-lens reach of the latest 30X ultrazooms (such as Olympus' own SP-800UZ, page 16), you can always change the lens on a Pen.

There are no dedicated macros or fisheye lenses available yet in Micro Four Thirds mount, but adapters will let you use regular Four Thirds lenses in the meantime.

Still, for newcomers to interchangeable-lens camera systems, the current selection of native-mount lenses should be an adequate starting point.

All told, Olympus has made a nice camera that showcases the virtues of the Micro Four Thirds format at a competitive price. We're looking forward to running a full production sample through the Pop Photo Lab soon. *—Philip Ryan*

Olympus hasn't wasted any precious space inside the E-PL1. To the left of the sensor is the SD card slot, which sits behind the battery and next to the HDMI port.

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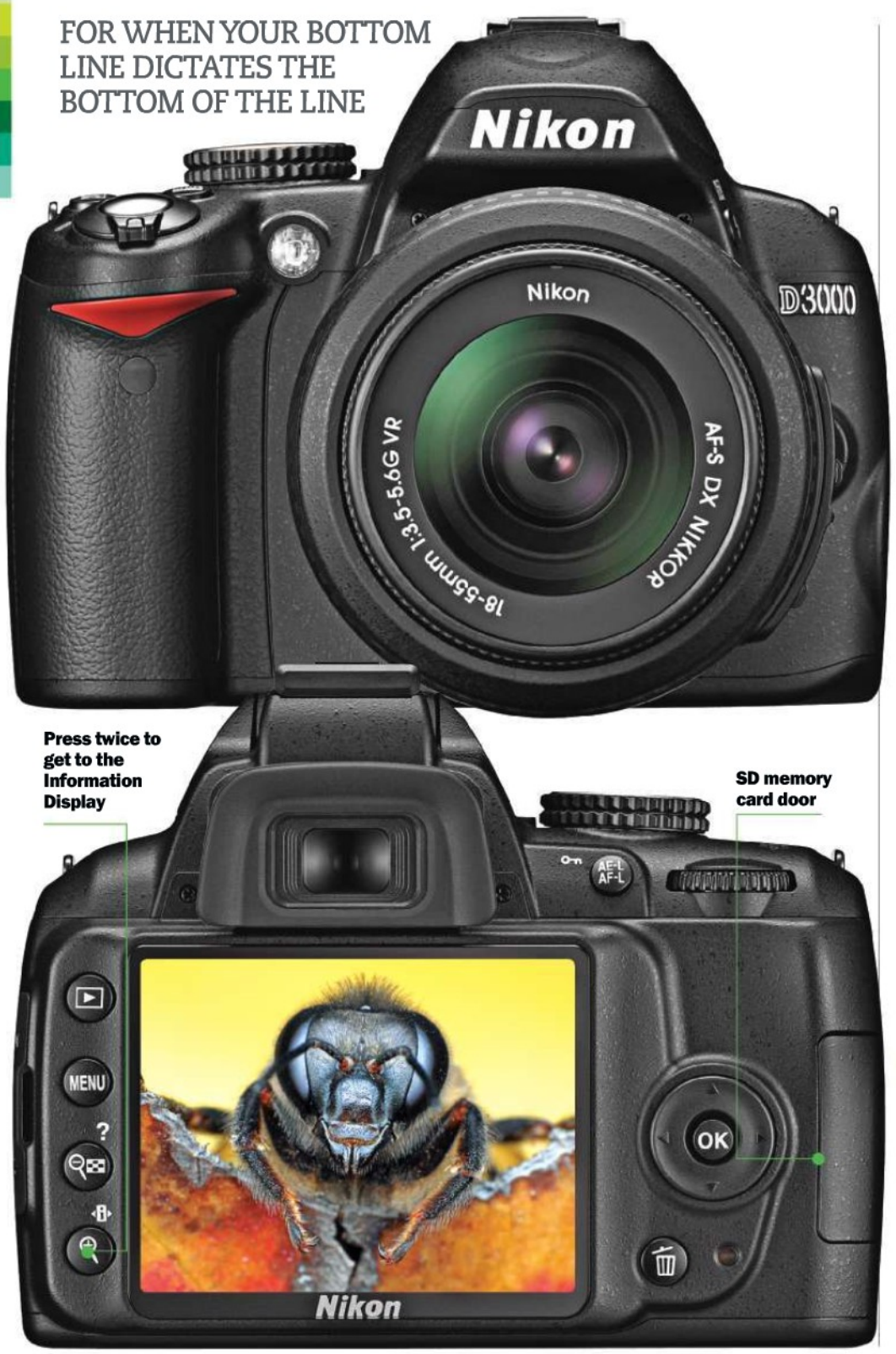


YOU CAN GET a lot of Nikon for your money—the $780 (body only) D90 pops readily to mind as a near-unbeatable deal. But what about the lowest-price entry point into the Nikon system, the D3000 ($550, street, with 18–55mm f/3.5–5.6 VR lens)? Despite the obvious savings, it's not nearly as compelling a deal.

Replacing both the Nikon D40 and D60, the D3000 shares the D60's 10.2MP sensor with its 12-bit A/D converter, the current standard for entry-level DSLRs.

That's plenty of imaging power, and the D3000 fared well in our image-quality tests against its main rivals, particularly in color accuracy. But sluggish autofocusing and other flaws set it back in the bargain pack.

Handling and Controls

Not that we're sour on this Nikon. As entry-level DSLRs go, it has a quite good body design. A well-formed grip has an indentation on the inside that nicely cradles your finger tips, and a ridge up top for leverage when tilting up and down.

The body is quite small, and at just over 1 pound, very light. But the small size also means a short grip, which may leave your pinky dangling below the body, and a

NIKON D3000
WHAT'S HOT
Very accurate color rendition.
Good resolving power for a 10.2MP camera.
WHAT'S NOT
No live-view shooting mode.
No automatic exposure bracketing.
WHO IT'S FOR
DSLR newbies who want the lowest-priced Nikon available—and don't mind the compromises on this model.

JUNE AUBREY R. YOUNG (LCD IMAGE)

nose-heavy balance with any but very light lenses. We did a fair amount of shooting with Nikon's 10–24mm f/3.5–4.5 AF-S DX lens—which can hardly be called enormous—and it noticeably tilted the body downward. The same can be said for the Tamron 17–50mm f/2.8 (page 82).

Controls are comparable to similar DSLRs, relying on a virtual control panel Nikon calls the Information Display in the 3-inch, 230,000-dot LCD. While we prefer more dedicated buttons, this has become the *de facto* standard for this level of camera.

The top of the D3000 doesn't have a lot of controls, but it is home to the useful exposure comp button, while the mode dial gives quick access to some commonly used scene modes.

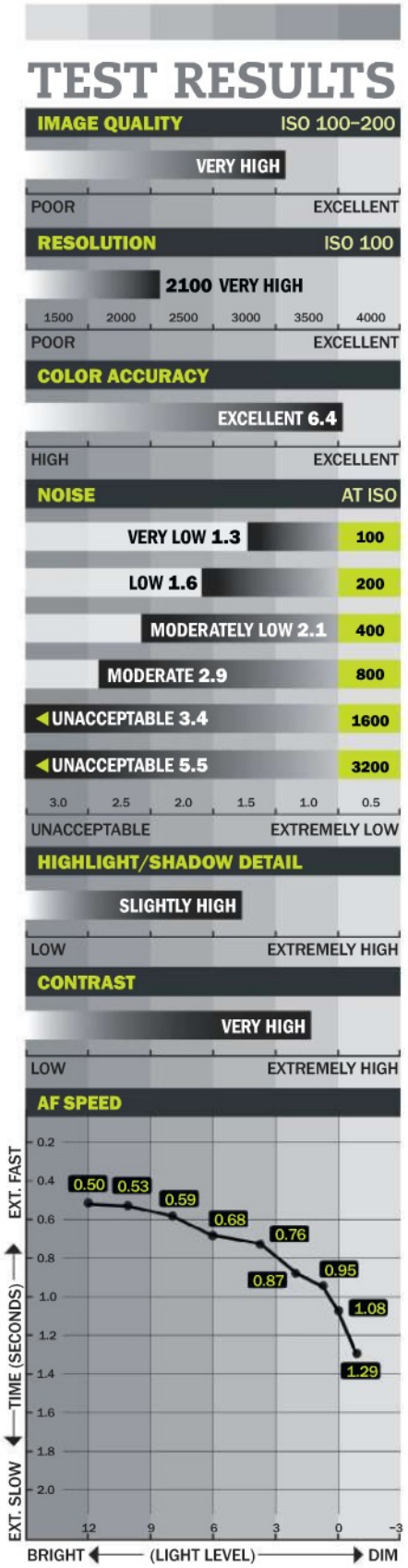
Once you get used to it, though, Nikon's user interface provides a quick way to change settings. And a button lets you easily adjust exposure compensation with the lone control wheel on the camera back.

In the Lab

In our tests, the D3000 posted resolution right between two major 10MP competitors, Canon's EOS Rebel XS ($500, street, with 18–55mm f/3.5–5.6 IS lens) and Sony's Alpha 330 ($550, street, with 18–55mm f/3.5–5.6 lens). The numbers were very close, though—2150 lines for the Rebel XS, 2100 lines for the Nikon, and 1970 lines for the Sony A330.

The D3000 fared well in our image-quality tests.

TEST RESULTS



That's not enough of variance to call one a big winner. Most shooters would be hard-pressed to see a difference between the amount of detail captured by these three cameras in typical shooting conditions, especially when shooting handheld with their respective kit lenses.

And while all three of these DSLRs delivered Excellent ratings in color accuracy, the D3000 served up the best result with an average Delta E of 6.4 for 8-bit TIFFs generated from RAW files using the latest version of Nikon's Capture NX. The Rebel scored 7.8, barely making our cutoff of 8 for Excellent, while Sony split the difference with a score of 7.1.

There's no PC terminal to trigger off-camera strobes, though DSLRs at this level typically don't have one.

We would have liked better noise control with this camera, however. We've seen what Nikon can do with its higher-end models, so we were disappointed

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SPECIFICATIONS

IMAGING: 10.2MP effective, APS-C sized CCD sensor captures images at 3872x2592 pixels with 12 bits/color in RAW mode.

STORAGE: SD/SDHC stores JPEG, NEF RAW, and RAW + JPEG (basic) files.

BURST RATE: Full-sized JPEGs (Fine mode), up to the capacity of your SD/SDHC memory card at 3 fps; RAW, up to 6 shots at 3 fps.

AF SYSTEM: TTL phase detection with 11 illuminated focus points (1 centered cross-type); single-shot and continuous AF with Predictive 3D focus tracking. Tested sensitivity down to EV −1 (at ISO 100, f/1.4).

SHUTTER SPEEDS: 1/4000 to 30 sec, plus B (1/3-EV increments); 100,000-cycle rating.

METERING: TTL metering using 420-pixel RGB sensor, 3D Color Matrix II, centerweighted, and spot (approx. 2.5% of viewfinder). EV 0–20 (ISO 100).

ISO RANGE: ISO 100–3200 (in 1/3-EV increments).

FLASH: Built-in pop-up with i-TTL autoflash, GN 39 (ISO 100, feet); flash sync to 1/200 sec; dedicated Nikon hot-shoe.

VIEWFINDER: Fixed eye-level pentamirror.

LCD: 3-in. TFT with 230,000-dot resolution.

OUTPUT: Hi-Speed USB 2.0, composite video and analog audio.

BATTERY: Rechargeable LP-E6 Li-ion, CIPA rating 550 shots.

SIZE/WEIGHT: 5.0x3.8x2.5 in., 1.25 lb with a card and battery.

STREET PRICE: $550 with AF-S DX Nikkor 18–55mm f/3.5–5.6G VR lens.

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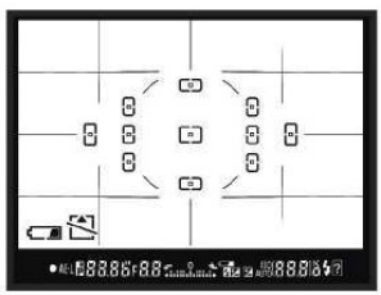


VIEWFINDER TEST: Accuracy, 95% (Excellent); Magnification, 0.8X (Very Good).

that the D3000 maintained a Low or better rating only up to ISO 200, while its two competitors held down noise that far up to ISO 800 (Rebel XS) and ISO 1600 (Sony A330).

Still, we were impressed with the D3000's ability to keep its resolution virtually unchanged all the way up to ISO 800. Even at ISO 3200, it dropped only to 1930 lines, although that was just enough to lower the score to a High rating from its Very High rating through ISO 800.

In our AF speed test, we were less impressed. In the brightest light (EV 12), it took 0.5 sec to focus—not bad, but the Sony A330 took 0.27 sec under the same conditions. In fact, the Sony beat the Nikon at every light level, though both cameras failed to focus in light dimmer than EV –1 (typical of consumer DSLRs).

Nikon didn't include video capture or live-view shooting in the D3000. But you won't find video in Canon's Rebel XS or Sony's A330, either. (Both of those do include live view.)

To put things in perspective, while the A330 focused in 0.49 sec at EV 4, about the same light level as a well-lit living room, the D3000 took 0.76 sec. And while the Nikon was able to focus at EV –1, taking an average of 1.29 sec, its performance was erratic in that near-moonlit darkness.

Other Trade-offs

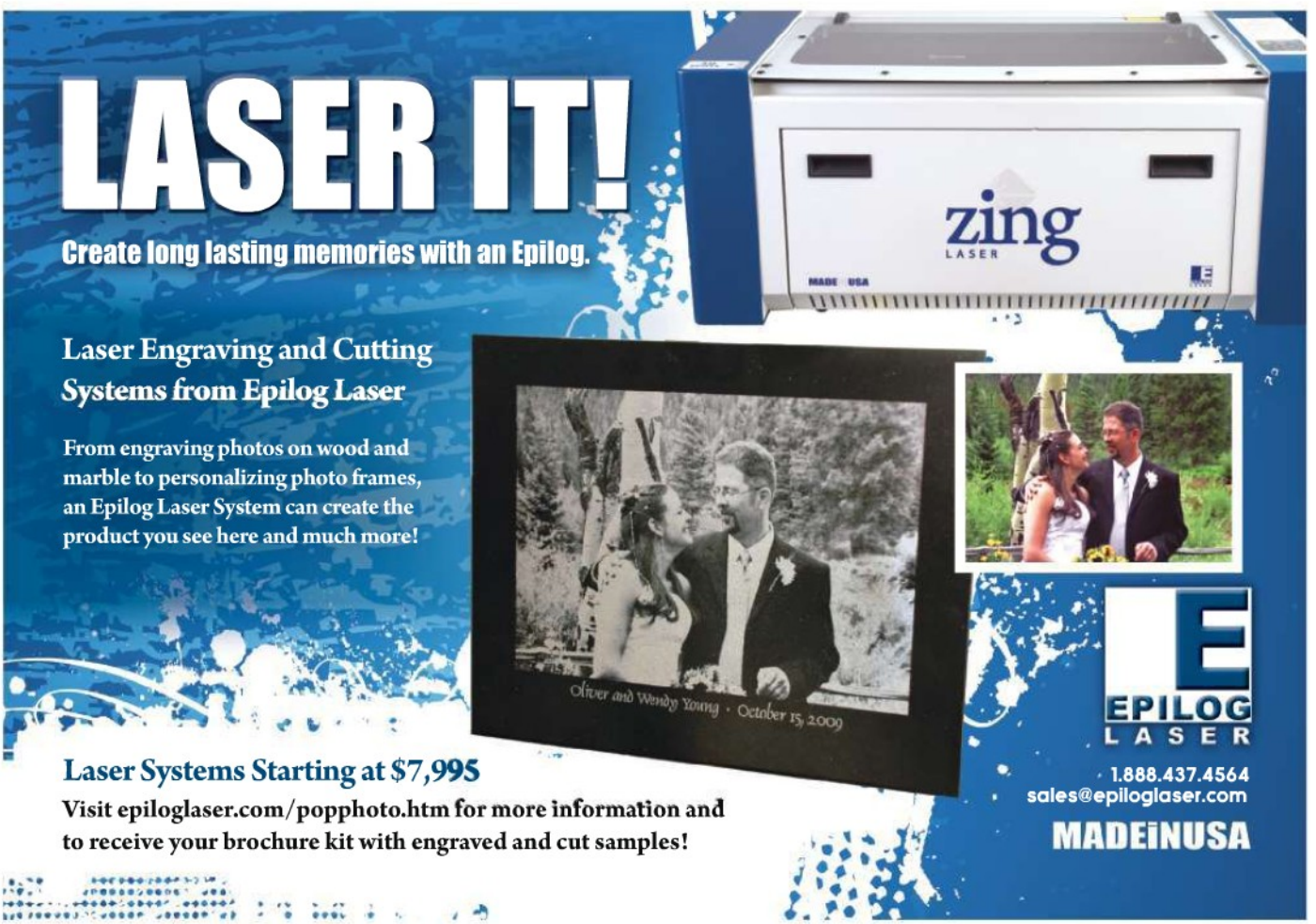
You can't shoot RAW files and Fine JPEGs at the same time with the D3000—instead, it restricts you to Basic (heavily compressed) JPEGs during RAW + JPEG capture. None of this camera's competitors have this restriction, and we can't think of any reason for it other than skimping in either processing or the camera's buffer.

Worse still, the D3000 doesn't have automatic exposure bracketing, simply unacceptable given that this is purely a matter of programming the camera to shift exposure during continuous drive mode.

Combine these issues with a skimpy manual that doesn't even have an index, and we started to wonder if Nikon is trying to force buyers to step up to the D5000.

So, while its test results put this Nikon in the middle of the budget DSLR pack, we can't ultimately recommend the D3000 over Canon's EOS Rebel XS, which has higher resolution, faster AF, and better noise control. We might put the Sony Alpha 330 ahead of the D3000, too, were it not for a poorly designed grip that seriously affected that camera's handling in our field tests.

Instead, if you're committed to the Nikon system, we recommend that you take a good hard look at that D90. *—Philip Ryan*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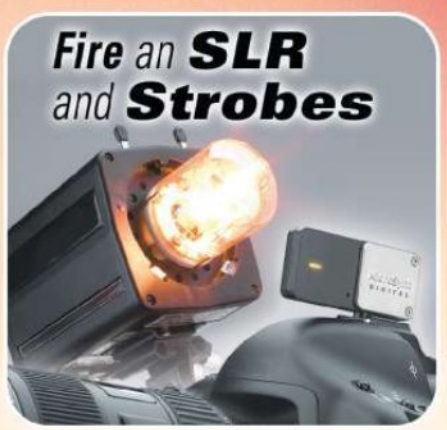
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AMATEUR ▬▬▬▬▬▬▬▬ PRO

Long Shot

SIGMA STABILIZES ONE OF ITS FINEST

TALK ABOUT popular: In mid-February, Sigma was offering three different versions of a 70–300mm f/4–5.6 full-frame zoom, including this new Optically Stabilized model ($400, street). It's one of the few zooms that let Sony and Pentax shooters choose between lens-based and camera-based stabilization.

A bit heavier than the comparable Canon and Nikon stabilized 70–300mm zooms, it's also about a half-inch shorter. The zoom and focusing rings are well proportioned, and their actions are adequately damped, but the barrel exhibits unusual zoom creep and has no lock. AF is slightly noisy and of average speed. Also, focusing is the conventional (not internal) type: The outer barrel turns during focus, and you can't touch up focus manually in the AF mode.

We found Excellent SQF performance at 70mm and 200mm. Approaching 300mm, however, sharpness fell from Excellent through Very Good down into the

SPECIFICATIONS

70–300MM (69.32–299.97mm tested), f/4–5.6 (4.12–5.94 tested), 16 elements in 11 groups. Focus ring turns 80°. Zoom ring turns 90°. Focal lengths marked at 70-, 100-, 135-, 200-, and 300mm.
DIAGONAL VIEW ANGLE: 34–8 degrees
WEIGHT: 1.4 lb **FILTER SIZE:** 62mm
MOUNTS: Canon, Nikon, Pentax, Sony, Sigma
STREET PRICE: $400

TEST RESULTS

DISTORTION: At 70mm, 0.06% (Imperceptible) pincushion; at 200mm, 0.26% (Slight) pincushion; at 300mm, 0.28% (Slight) pincushion
LIGHT FALLOFF: At 70mm, gone by f/5; at 200mm, by f/6.3; at 300mm, by f/6.3
CLOSE-FOCUSING: 58.4 inches
MAXIMUM MAGNIFICATION RATIO: At 70mm, 1:14.94; at 200mm, 1:5.51; at 300mm, 1:3.49

SIGMA 70–300MM F/4–5.6 DG OS AF	
WHAT'S HOT	**WHAT'S NOT**
Superb distortion control.	Underwhelming OS results.

Good range—not unusual in tele zooms at this price.

Better news: Our DxO Analyzer 3.2 tests of linear distortion found virtually none at 70mm and only Slight pincushioning at 200mm and 300mm. This was slightly better than the Nikon and much better than the Canon's Visible distortion.

Light falloff was slightly better than the Nikon and far better than the Canon, which had to be stopped down to f/11 to eliminate falloff at 200mm and 300mm.

Maximum subject magnification was good (1:3.5), and in DxO blur-factor tests of the stabilization mechanism, four users averaged between 1 and 2 stops of extra handholdable sharpness—a bit below-average, and beneath Sigma's 4-stop spec (but we rarely achieve the advantages that makers claim).

By far the least-pricey stabilized tele zoom, this lens will have a strong appeal to the budget-bound. Close-up fans will be more tempted by Sigma's $210 70–300mm f/4–5.6 macro zoom, with 1:2 magnification. The question is: How much are 1 or 2 extra stops of handholding worth to you?

—Julia Silber

SUBJECTIVE QUALITY FACTOR

Our standard lens test, SQF rates sharpness by print size

70 MM

Size	5x7	8x10	11x14	16x20	20x24
4.0	95.8	94.5	91.4	85.1	77.3
5.6	96.0	94.8	92.0	86.3	79.4
8.0	96.1	94.9	92.0	86.3	79.4
11.0	96.2	95.1	92.4	87.1	80.8
16.0	95.9	94.6	91.6	85.8	78.7
22.0	95.1	93.6	90.0	82.7	73.5

200 MM

Size	5x7	8x10	11x14	16x20	20x24
5.6	95.6	94.2	91.0	84.7	76.9
8.0	95.5	94.2	90.9	84.4	76.5
11.0	95.7	94.6	90.9	84.6	76.9
16.0	95.6	94.3	91.1	84.7	76.9
22.0	95.2	93.8	90.3	83.1	74.3
32.0	94.7	93.1	89.1	80.4	69.2

300 MM

Size	5x7	8x10	11x14	16x20	20x24
5.6	94.2	91.5	83.4	70.8	61.4
8.0	92.5	88.3	76.0	58.5	47.6
11.0	92.6	88.6	76.8	59.6	47.8
16.0	93.5	90.2	80.4	65.8	55.2
22.0	93.6	90.3	80.8	66.2	55.0
32.0	92.4	88.4	76.6	58.9	44.7

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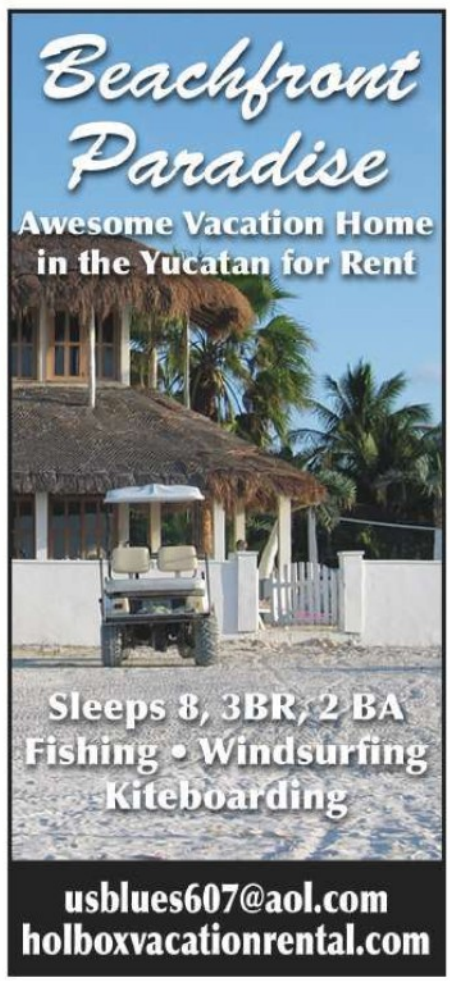

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AMATEUR PRO

Shake King

STABILIZATION IN A FAST, WIDE ZOOM

THIS HIGH-SPEED digital-only ultrawide ($650, street) upgrades Tamron's nonstabilized 17–50mm f/2.8 ($460, street). Like the earlier lens (which remains in the lineup), this version uses an Extra Refractive (XR) element, two elements of low dispersion, and three of compound aspheric glass—adding up to a remarkably compact yet sharp and mostly distortion-free f/2.8. Vibration Compensation uses Tamron's triaxial technology, claimed to work on three planes instead of the usual two.

A 26–78mm full-frame equivalent, this lens, like all SP Tamrons, feels solid and ruggedly constructed. Zoom action is slightly stiff, so the lock seems moot. The manual-focus ring is a bit underdamped. AF is fast, accurate and quiet —a big improvement over the earlier version, which we called "whiny" back in 2006.

As usual for a stabilized lens, it's slightly larger and heavier than the nonstabilized version, though much lighter than Nikon's somewhat comparable, nonstabilized, 17–35mm f/2.8 full-framer ($1,765, street). And it's compact enough to cast a shadow from a built-in flash

CONTINUES ON PAGE 108

SPECIFICATIONS

17–50MM (16.64–50.01mm tested), f/2.8 (2.54–2.91 tested), 19 elements in 14 groups. Focus ring turns 60 degrees. Zoom ring turns 70 degrees. Focal lengths marked at 17-, 24-, 35-, and 50mm.
DIAGONAL VIEW ANGLE: 78–31 degrees
WEIGHT: 1.3 lb **FILTER SIZE:** 72mm
MOUNTS: Canon AF, Nikon AF
INCLUDED: Lenshood
STREET PRICE: $650

TEST RESULTS

DISTORTION: At 17mm, 0.62% (Visible) barrel; at 24mm, 0.17% (Slight) barrel; at 50mm, 0.02% (Imperceptible) pincushion.
LIGHT FALLOFF: At 17mm and 24mm, none; at 50mm, gone by f/3.5.
CLOSE-FOCUSING DISTANCE: 11.08 inches
MAXIMUM MAGNIFICATION RATIO: At 17mm, 1:9.5; at 24mm; 1:6.86; at 50mm, 1:4.14

TAMRON SP 17–50MM F/2.8 XR Di II VC AF	
WHAT'S HOT	**WHAT'S NOT**
Solid, rugged construction.	Visible distortion at 17mm.

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IGOR TRYNDIN

A STANDALONE program from Unified Color, HDR PhotoStudio 2 ($100, direct) helps you create beautiful high-dynamic-range images that look more like what the human eye sees.

Why does this matter? Since the technique combines multiple exposures into an image that has greater dynamic range than a single exposure can capture, you have far more data to work with. But more data means more pitfalls: HDR often introduces strange color shifts, weird haloes, and way too much local contrast.

Three tools are all you need: With HDR PhotoStudio 2, realistic high-dynamic-range images are within your reach.

Unlike a complex program such as Photomatix, HDR Photo Studio's interface is simple. When your merged file opens, you get a full-screen view of your image, flanked by a column of adjustment tools on the left.

Your image will be full of potential, but it won't look like

CONTINUES ON PAGE 112

How It Works

HDR PhotoStudio performs its brightness and contrast operations not on the color channels but on the luminance channels, maintaining your original color throughout the process. It also does its adjustments in 32-bit. The images it creates look so close to what the eye sees in reality that, when well done, they might appear to have been produced in the camera.

SPECIFICATIONS

MINIMUM SYSTEM REQUIREMENTS
Mac OS 10.5 or newer, Windows XP or newer, 2.5 GHz dual-core processor (quad core recommended), 2GB RAM
PRICE: $100, direct; www.unifiedcolor.com

HDR PHOTOSTUDIO 2
WHAT'S HOT
Creates the best HDR photos we've seen.
WHAT'S NOT
Requires a powerful computer to work.
WHO IT'S FOR
Shooters who like HDR but want realism.
Those rare 32-bit-loving imaging geeks.

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THE GUIDE

OUR OPINIONATED TAKE ON THE CAMERAS AND LENSES WE'VE TESTED

GUIDE TO THE GUIDE

In these three pages, we rate all of the current DSLRs (and one rangefinder), plus all of the current lenses within a given focal range, that we've tested. The star ratings reflect:

CAMERAS

- **Image quality:** Includes resolution, noise, and color accuracy
- **Performance/capabilities:** Includes autofocus, metering, and burst rate
- **Usability:** Includes ergonomics, controls, and customization

LENSES

- **Optics:** Such as sharpness, distortion, light falloff
- **Barrel design:** Includes focus and zoom rings, markings, and AF motor

To match cameras and lenses, look for the labels.

APS-C · FOUR THIRDS · FULL-FRAME · BEST IN CLASS · GETTING OLD · NEW MODEL

Is it worth the dough? Look for: STEAL · PRICEY

CANON EOS-1D MARK IV

★★★★1/2 APS-H

AMATEUR — PRO

$5,000, street, body only
Canon's premier speedster (as JPEG and RAW burst rates) earns a half-star more in the rating due to increased resolution and ISOs in the stratospheric (102,400) range, but could have gained more had its new AF not been slower (!) than the Mark III's.
STANDOUT SPEC 10 fps at full resolution—nobody tops it.
SENSOR 16.1MP CMOS, 14-bit RAW capture
IMAGE STABILIZATION Lens-based
VIDEO RES/FRAME RATE 1080p/30 fps, 720p/60 fps
LCD 3-in., 920,000-dot

CANON EOS-1Ds MARK III

★★★★1/2 FULL-FRAME

AMATEUR — PRO

$6,115, street, body only
Once Canon's megapixel king, it now shares that throne with the newer EOS 5D Mark II. Awesome image quality in a bulletproof body—at a high cost in both weight and dollars. A favorite of nature and studio shooters both.
STANDOUT SPEC Medium-format imaging from a (sort of) 35mm body.
SENSOR 21.1MP CMOS, 14-bit RAW capture
IMAGE STABILIZATION Lens-based
VIDEO None
LCD 3-in., 230,000-dot

CANON EOS 5D MARK II

★★★★1/2 FULL-FRAME

AMATEUR — PRO

$2,500, street, body only
Long-awaited update of the original full-frame workhorse, the Mark II impressed us with stellar image quality, HD video, rugged construction—but not the older AF system recycled from the Mark I. Film students have taken to its video big time.
STANDOUT SPEC Excellent image quality to ISO 3200—'nuff said.
SENSOR 21.1MP CMOS, 14-bit RAW capture
IMAGE STABILIZATION Lens-based
VIDEO RES/FRAME RATE 1080p/30 fps, 720p/30 fps
LCD 3-in., 920,000-dot

CANON EOS 7D

★★★★ APS-C

AMATEUR — PRO

$1,700, street, body only
Canon's top APS-C body is also its first with wireless flash control through the pop-up. Solid, weathersealed build is bolstered by high-res images with low noise at high ISOs.
STANDOUT SPEC Its 8-fps native burst rate is the fastest of any APS-C format body, just beating out Nikon's D300s.
SENSOR 18MP CMOS, 14-bit RAW capture
IMAGE STABILIZATION Lens-based
VIDEO RES/FRAME RATE 1080p/30 fps, 720p/60 fps
LCD 3-in., 920,000-dot

CANON EOS 50D

★★★★ APS-C

AMATEUR — PRO

$930, street, body only
Now second banana in Canon APS-C models, it offers near class-leading image quality, a great build, and very speedy shooting—but no video. For that, you'll need to move up to a 7D—or down to a Rebel T1i.
STANDOUT SPEC 6.3-fps burst rate still quite good in this class—but no longer the fastest of the fast.
SENSOR 15.1MP CMOS, 14-bit RAW capture
IMAGE STABILIZATION Lens-based
VIDEO None
LCD 3-in., 920,000-dot

CANON EOS REBEL T1i

★★★★ APS-C

AMATEUR — PRO

$750, street, with 18–55mm f/3.5–5.6 EF-S IS lens
As far from a "starter" camera as any Rebel has ever come (up until the T2i), it has the same sensor and nearly the same processing power as pricier big brother EOS 50D.
STANDOUT SPEC Sheer imaging power—both still and video—ranks best for this price.
SENSOR 15.1MP CMOS, 14-bit RAW capture
IMAGE STABILIZATION Lens-based
VIDEO RES/FRAME RATE 1080i/20 fps, 720p/30 fps
LCD 3-in., 920,000-dot

CANON EOS REBEL XS

★★1/2 APS-C

AMATEUR — PRO

$500, street, with 18–55mm f/3.5–5.6 EF-S IS lens
Inheriting the sensor of the former "top Rebel" XTi, the XS adds live view to round out Canon's most economical DSLR. And it comes with an IS kit lens, standard.
STANDOUT SPEC The XS, for an "entry-level" model, autofocuses faster than many a pricier camera.
SENSOR 10MP CMOS, 12-bit RAW capture
IMAGE STABILIZATION Lens-based
VIDEO None
LCD 2.5-in., 230,000-dot

LEICA M9

★★★1/2 FULL-FRAME

AMATEUR — PRO

$6,995, street, body only
Leica finally serves up a full-frame M body, and it produced Excellent image quality through ISO 800. Outside the lab, we loved the classic Leica style and good old-fashioned simplicity of operation. But what's with the max ISO of 2500?
STANDOUT SPEC A sensor that delivers all the quality Leica lenses can provide.
SENSOR 18MP CCD, 14-bit RAW capture
IMAGE STABILIZATION None
VIDEO None
LCD 2.5-in., 230,000-dot

NIKON D3s

★★★★★ FULL-FRAME

AMATEUR — PRO

$5,200, street, body only
Update of the D3 was the first DSLR to break the ISO 100,000 barrier, and adds video capture. If 12.1MP sounds low, superb color accuracy and clean images up to ISO 6400 make up for it.
STANDOUT SPEC Noise control—essentially the best in the business.
SENSOR 12.1MP CMOS, 14-bit RAW capture
IMAGE STABILIZATION Lens-based
VIDEO RES/FRAME RATE 720p/24 fps
LCD 3-in., 921,000-dot

NIKON D3X

★★★★★ FULL-FRAME

AMATEUR — PRO

$7,470, street, body only
Our 2009 Camera of the Year, it's the image-quality champ of current DSLRs—and should be for a while. Built like a tank, heavy and expensive, but those who love it don't care. Has the fastest AF in low light.
STANDOUT SPEC The absolute, breathtaking state-of-the-artness of it.
SENSOR 24.5MP CMOS, 14-bit RAW capture
IMAGE STABILIZATION Lens-based
VIDEO None
LCD 3-in., 920,000-dot

NIKON D90

★★★1/2 APS-C

AMATEUR — PRO

$780, street, body only
The first DSLR with video, it remains Nikon's main midlevel model, with great resolution, HD movie-making, and near-perfect layout. Unlike lesser Nikons, it accepts lenses without AF motors.
STANDOUT SPEC The pop-up flash that supports wireless flash control. You won't find that on the D5000.
SENSOR 12.3MP CMOS, 12-bit RAW capture
IMAGE STABILIZATION Lens-based
VIDEO RES/FRAME RATE 720p/24 fps
LCD 3-in., 920,000-dot

NIKON D300S

★★★★ APS-C

AMATEUR — PRO

$1,500, street, body only
Thoughtful major tweak of the well-regarded D300 adds video (though we wish it did 1080p at 30 fps) and increases native burst rate to 7 fps. Very competitive with the current state of the midrange art, but that battle keeps on smokin'.
STANDOUT SPEC Color-and-shape-sensing AF tracking a standout shooting tool.
SENSOR 12.3MP CMOS, 14-bit RAW capture
IMAGE STABILIZATION Lens-based
VIDEO RES/FRAME RATE 720p/24 fps
LCD 3-in., 921,000-dot

CAMERAS AND LENSES—TESTED AND RATED FOR FULL TEST REPORTS AND INFO ON HOW WE TEST AND RATE CAMERAS AND LENSES, VISIT POPPHOTO.COM/REVIEWS

GUIDE TO THE GUIDE

In these three pages, we rate all of the current DSLRs, plus all of the current lenses within a given focal length range, that we've tested. The star ratings reflect:

CAMERAS
- **Image quality:** Includes resolution, noise, and color accuracy
- **Performance/capabilities:** Includes autofocus, metering, and burst rate
- **Usability:** Includes ergonomics, controls, and customization

LENSES
- **Optics:** Includes sharpness, distortion, and light falloff
- **Barrel design:** Includes focus and zoom rings, markings, and AF motor

To match cameras and lenses, look for the labels below.

APS-C | FOUR THIRDS | FULL-FRAME | BEST IN CLASS | GETTING OLD | NEW MODEL | STEAL | PRICEY

NIKON D700
★★★★ FULL-FRAME
AMATEUR PRO

$2,400, street, body only For the enthusiast craving pro-grade features, the D700 offers a full-frame sensor borrowed from the D3 supercamera, sensitivity to ISO 25,600, 51-zone AF, and a pop-up flash with wireless flash control.
STANDOUT SPEC That big, juicy full-frame sensor in an enthusiast's $2,400 body, for great low-noise shooting from ISO 100 through 6400.
SENSOR 12.1MP CMOS, 14-bit RAW capture
IMAGE STABILIZATION Lens-based
VIDEO None
LCD 3-in., 921,000-dot

NIKON D5000
★★★ APS-C
AMATEUR PRO

$750, street, with 18–55mm f/3.5–5.6 DX Nikkor VR lens
For Nikonians who want a hinged and tilting LCD, the D5000 is the only option. Plus you get video, 4-fps burst shooting, speedy AF, and sensitivity out to ISO 6400.
STANDOUT SPEC The price—it offers (almost) everything the D90 has but costs a bit less.
SENSOR 12.3MP CMOS, 12-bit RAW capture
IMAGE STABILIZATION Lens-based
VIDEO RES/FRAME RATE 720p/24 fps
LCD 2.7-in., 230,000-dot

NIKON D3000
★★1/2
AMATEUR PRO

$550, street, with 18–55mm f/3.5–5.6 DX Nikkor VR lens
A nice, low-cost entry-level DSLR (tested in this issue), but in today's market, good enough isn't good enough. Very high image quality for its class, but sluggish AF and odd omissions—such as autoexposure bracketing—had us scratching our heads.
STANDOUT SPEC 420-zone Matrix metering system.
SENSOR 10.2MP CCD, 12-bit RAW capture
IMAGE STABILIZATION Lens-based
VIDEO None
LCD 3-in., 230,000 dot

OLYMPUS E-3
★★★1/2 FOUR THIRDS
AMATEUR PRO

$1,060, street, body only Pros cotton to the Olympus flagship for its super-rugged construction and its superior lens line. Also nice: Fast AF, a small but swiveling LCD, and built-in image stabilization.
STANDOUT SPEC Alloy chassis fully encases the innards—including the back, a weak area on many DSLRs—and allows you to fold the LCD inward to protect it from scratches—or worse.
SENSOR 10.1MP LiveMOS, 12-bit RAW capture
IMAGE STABILIZATION 2.5–3 stops
VIDEO None
LCD 2.5-in., 230,000-dot

OLYMPUS E-30
★★★ FOUR THIRDS
AMATEUR PRO

$880, street, body only This less-expensive companion to the pro-grade Olympus E-3 boasts more megapixels, an impressive for its class 5-fps burst rate, comparable handling, and an assortment of fun filters—pop art, anyone?
STANDOUT SPEC The fully-articulating LCD screen makes live view much more useful while also protecting the screen from harm if you turn it inward.
SENSOR 12.3MP LiveMOS, 12-bit RAW capture
IMAGE STABILIZATION 2.5–3 stops
VIDEO None
LCD 2.7-in., 230,000-dot

OLYMPUS E-520
★★★ FOUR THIRDS
AMATEUR PRO

$420, street, with 14–42mm f/3.5–5.6 Zuiko Digital lens
Its live view previews exposure settings (albeit on a non-swiveling LCD), and overall ergonomics are very user-friendly—all for $420, with a lens. Paired with its housing, you'll have a diving rig for under $1,200.
STANDOUT SPEC The built-in image stabilization fared extremely well in our field tests and can be used with any lens you put on the camera.
SENSOR 10MP LiveMOS, 12-bit RAW capture
IMAGE STABILIZATION 2–3 stops
VIDEO None
LCD 2.7-in., 230,000-dot

OLYMPUS E-620
★★★ FOUR THIRDS
AMATEUR PRO

$568, street, with 14–42mm f/3.5–5.6 Zuiko Digital lens
For arty amateurs, the E-620 offers the still-new seeming Art Filters, special effects that invite experimentation. Plus: small, light build, and body-based, sensor-shift IS.
STANDOUT SPEC The super-articulated swiveling/tilting LCD that the E-520 lacks.
SENSOR 12.3MP LiveMOS, 12-bit RAW capture
IMAGE STABILIZATION 2 stops
VIDEO None
LCD 2.7-in., 230,000-dot

PENTAX K-7
★★★ APS-C
AMATEUR PRO

$1,000, street, body only Built like a tank, Pentax's flagship DSLR has a well-designed body and records pleasing video, but its image quality and AF speed fall short of similarly-priced competitors.
STANDOUT SPEC 77 weather seals let you shoot in 14°F temperatures.
SENSOR 14.6MP CMOS, 12-bit RAW capture
IMAGE STABILIZATION 2.5–3 stops
VIDEO RES/FRAME RATE 1536x1024/30 fps, 720p/30 fps
LCD 3-in., 921,000-dot

SIGMA SD14
★★ APS-C
AMATEUR PRO

$725, street, body only Unique 3-layer RGB sensor distinguishes the cultish SD14, an aging design that has fallen well behind the current state of the art in imaging, AF, and shooting speed.
STANDOUT SPEC Imaging with a creamy, subtle, almost filmlike quality.
SENSOR 4.7MPx3-layer Foveon X3 sensor, 12-bit RAW capture
IMAGE STABILIZATION Lens-based
VIDEO None
LCD 2.5-in., 230,000-dot

SONY ALPHA 330
★★1/2 APS-C
AMATEUR PRO

$550, street, with 18–55mm f/3.5–5.6 Sony DT SAM lens An entry-level DSLR with a flexible LCD, the Alpha 330 has speedy autofocus, great live viewing, and a price fit for the thriftiest photographers.
STANDOUT SPEC The live view uses the conventional (and fast) AF system, fires with no delay.
SENSOR 10.2MP CCD, 12-bit RAW capture
IMAGE STABILIZATION 2.5 stops
VIDEO None
LCD 2.7-in, 230,400-dot

SONY ALPHA 380
★★★ APS-C
AMATEUR PRO

$700, street, with 18–55mm f/3.5–5.6 Sony DT SAM lens
With its made-for-beginners display interface and great live view, the Alpha 380 would be perfect for those new to DSLRs.
STANDOUT SPEC One of the best live-view systems yet, works without delay in AF or firing. But we do wish it showed 100% of the scene.
SENSOR 14.2MP CCD, 12-bit RAW capture
IMAGE STABILIZATION 2–3 stops
VIDEO None
LCD 2.7-in., 230,400-dot

SONY ALPHA 550
★★★ APS-C
AMATEUR PRO

$950, street, body only The best live-view experience in DSLRs just got better with the addition of 100% accuracy view from the imaging sensor plus the no-delay version using a separate sensor. Speedy 7-fps burst capture and in-the-camera HDR, too, but still a bit expensive considering there's no video.
STANDOUT SPEC Live view without tears.
SENSOR 14.2MP CMOS, 12-bit RAW capture
IMAGE STABILIZATION 2–3 stops
VIDEO None
LCD 3-in., 921,600-dot

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SONY ALPHA 850
★★★★ FULL-FRAME
AMATEUR PRO

$2,000, street, body only Minor change of the A900 drops viewfinder accuracy to 98%, slows burst rate to 3 fps, and forgoes a wireless remote control. It kept the impressive image quality, top ergonomics, and superfast AF, though—so much so that it achieved an equal rating to the A900.
STANDOUT SPEC The most full-frame bang for the buck you can get today.
SENSOR 24.6MP CMOS, 14-bit RAW capture
IMAGE STABILIZATION 2–2.5 stops
VIDEO None
LCD 3-in., 921,600-dot

SONY ALPHA 900
★★★★ FULL-FRAME
AMATEUR PRO

$2,700, street, body only Sony's blockbuster full-framer puts up top resolution numbers at ISO 100 but has some catchup to do in noise and color accuracy. Speedy AF and great ergonomics almost make us forget that it doesn't have live view or pop-up flash.
STANDOUT SPEC That big, bright viewfinder makes you realize why you prefer SLRs.
SENSOR 24.6MP CMOS, 14-bit RAW capture
IMAGE STABILIZATION 2–2.5 stops
VIDEO None
LCD 3-in., 921,600-dot

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CANON EF 70–300MM F/4–5.6 IS USM

★★ FULL-FRAME

AMATEUR PRO

$550, street This successor to Canon's 75–300mm, the industry's first stabilized lens, has new coatings to suppress ghosting and flare, and a panning mode for the IS system. Zoom lock button at 70mm. **STANDOUT SPEC** Stabilization improved to slightly more than 3 stops, according to our tests. **MOUNTS** Canon EF **WEIGHT** 1.4 pounds **LENGTH** 5.7–7.8 inches **FILTER SIZE** 58mm **IMAGE STABILIZATION** Yes

CANON EF 70–300MM F/4.5–5.6 DO IS USM

★★★ FULL-FRAME

AMATEUR PRO

$1,250, street, with hood and case Canon's triple-layered diffractive optical element (DO) significantly reduces the length and weight of the lens. Distortion and vignetting slightly better than non-DO version. IS adds appeal. **STANDOUT SPEC** Compactness. It's one-third smaller than the non-DO 70–300mm. **MOUNTS** Canon EF **WEIGHT** 1.6 pounds **LENGTH** 3.9–6.25 inches **FILTER SIZE** 58mm **IMAGE STABILIZATION** Yes

CANON EF 100–400MM F/4.5–5.6L IS USM

GETTING OLD

★★★ FULL-FRAME

AMATEUR PRO

$1,610, street, with hood and tripod collar In Canon's signature white, it has all-metal barrel construction and IS, for one hefty lens. Optical performance should've been better at 400mm. **STANDOUT SPEC** Unique zoom-damping control. It's an extra ring that increases zoom friction when turned clockwise. **MOUNTS** Canon EF **WEIGHT** 3.4 pounds **LENGTH** 7.5–10.6 inches **FILTER SIZE** 77mm **IMAGE STABILIZATION** Yes

NIKON AF-S VR NIKKOR 70–300MM F/4.5–5.6G ED

★★★ FULL-FRAME

AMATEUR PRO

$540, street, with hood and case Reasonably priced lens of reasonably, average optical quality. Focusing ring conveniently close to the lens mount. Very wide zoom ring. **STANDOUT SPEC** Vibration reduction at 300mm was among industry's best, gaining between 3 and 4.5 stops. **MOUNTS** Nikon AF **WEIGHT** 1.7 pounds **LENGTH** 5.7–7.65 inches **FILTER SIZE** 67mm **IMAGE STABILIZATION** Yes

NIKON AF VR NIKKOR 80–400MM F/4.5–5.6D ED

PRICEY

★★1/2 FULL-FRAME

AMATEUR PRO

$1,650, street, with hood, case, and tripod collar Nikon's earliest Vibration Reduction lens in the lineup, it remains top-notch. Our tests showed a 4-stop improvement in shutter speeds, a still-outstanding performance. **STANDOUT SPEC** That great VR performance. Tripod collar allows for 360-degree rotation. **MOUNTS** Nikon AF **WEIGHT** 3.0 pounds **LENGTH** 6.75–9 inches **FILTER SIZE** 77mm **IMAGE STABILIZATION** Yes

OLYMPUS ZUIKO DIGITAL 50–200MM F/2.8–3.5 ED

BEST IN CLASS

★★★★ FOUR THIRDS

AMATEUR PRO

$961, street, with hood, case, and tripod collar As expected, the Zuiko optics are exemplary for this 100–400mm equivalent. Our SQF charts show excellent sharpness even at the longest focal length—impressive. **STANDOUT SPEC** Weather-resistant O-ring for protection against dust and moisture. **MOUNTS** Four Thirds **WEIGHT** 2.4 pounds **LENGTH** 6.2–8.8 inches **FILTER SIZE** 67mm **IMAGE STABILIZATION** In the camera

PENTAX-DA 55–300MM F/4–5.8 ED

STEAL

★★★ APS-C

AMATEUR PRO

$350, street, with hood and case Unusual for a kit lens, this 82.5–450mm equivalent has Excellent image quality, even at 300mm. But AF is loud and slow—Pentax must add its supersonic drive motor (SDM) to this lens for it to be a competitor. **STANDOUT SPEC** Price, low for such a good, long lens. **MOUNTS** Pentax KAF2 **WEIGHT** 2.4 pounds **LENGTH** 4.35–5.5 inches **FILTER SIZE** 58mm **STABILIZATION** In the camera

SIGMA 50–500MM F/4–6.3 EX DG APO HSM

GETTING OLD

★★★ FULL-FRAME

AMATEUR PRO

$1,060, street, with hood, case, and tripod collar A nature shooter's dream, it's extremely sharp, with solid construction and close focusing at all focal lengths. Maximum magnification at 200mm was 1:4.8. **STANDOUT SPEC** Hefty—you will need a tripod or else take up bodybuilding. **MOUNTS** Canon, Four Thirds, Nikon, Pentax, Sigma, Sony **WEIGHT** 4.25 pounds **LENGTH** 8.6–12.1 inches **FILTER SIZE** 86mm **IMAGE STABILIZATION** No

SIGMA 70–300MM F/4–5.6 DG APO MACRO

STEAL GETTING OLD

★★★ FULL-FRAME

AMATEUR PRO

$210, street, with hood and case A sturdy, older APO lens with convenient features such as a focus-limiter switch, as well as broad zoom and focus rings. Sufficiently light, so there's no need for a tripod mount. **STANDOUT SPEC** A tie—1:2 macro and that price. Sweet! **MOUNTS** Canon, Nikon, Pentax, Sigma, Sony **WEIGHT** 1.3 pounds **LENGTH** 4.8–6.9 inches **FILTER SIZE** 58mm **IMAGE STABILIZATION** No

SIGMA 70–300MM F/4–5.6 DG OS

STEAL

★★★ FULL-FRAME

AMATEUR PRO

NEW MODEL

$400, street, with hood Sigma added stabilization to one of its most popular zooms. AF is quick, if not quiet, and the glass is sharp at all but the longest focal lengths. By far the least expensive stabilized lens in this class. **STANDOUT SPEC** Improved distortion and vignetting. **MOUNTS** Canon, Nikon, Pentax, Sigma, Sony **WEIGHT** 1.4 pounds **LENGTH** 5.0–7.7 inches **FILTER SIZE** 62mm **IMAGE STABILIZATION** Yes

SIGMA 100–300MM F/4 EX APO HSM

★★★ FULL-FRAME

AMATEUR PRO

$1,200, street, with hood and case This hefty, constant-aperture zoom showed overall decent optics in our tests, with the exception of close-up performance at 300mm. **STANDOUT SPEC** Tripod-collar lock knob has a spring-loaded safety catch that prevents the lens from slipping out of the collar. Smart! **MOUNTS** Canon, Nikon, Pentax, Sigma, Sony **WEIGHT** 3.35 pounds **LENGTH** 8.9 inches **FILTER SIZE** 82mm **IMAGE STABILIZATION** No

SIGMA 120–300MM F/2.8 EX APO HSM

PRICEY

★★★1/2 FULL-FRAME

AMATEUR PRO

$3,000, street, with hood, case, and tripod collar This long, fast, full-frame lens has a large price to match. Our SQF tests revealed sharpness in the Excellent range even all the way out to 300mm. But it weighs nearly 6 pounds. **STANDOUT SPEC** Tested close-focusing performance, 1:8.9 at 87.5 inches (at 300mm), was exceptional. **MOUNTS** Canon, Nikon, Sigma **WEIGHT** 5.8 pounds **LENGTH** 10.8 inches **FILTER SIZE** 105mm **IMAGE STABILIZATION** No

SIGMA 120–400MM F/4.5–5.6 APO DG OS HSM

★★★1/2 FULL-FRAME

AMATEUR PRO

$900, street, with hood, case, and tripod collar An upgrade from the discontinued 135–400mm, it adds the silent HSM focusing motor, apochromatic design to minimize color aberration, and optical stabilizer. Good balance for a large lens. **STANDOUT SPEC** Distortion was almost flawless at every focal length in our tests. **MOUNTS** Canon, Nikon, Pentax, Sigma, Sony **WEIGHT** 3.8 pounds **LENGTH** 8.1–10.6 inches **FILTER SIZE** 77mm **IMAGE STABILIZATION** Yes

SIGMA 150–500MM F/5–6.3 APO DG OS HSM

★★★ FULL-FRAME

AMATEUR PRO

$1,000, street, with hood, case, and tripod collar Well-positioned, large zoom and focusing rings, a tripod collar with finger channels, and OS make this the rare long tele lens that's almost handholdable. **STANDOUT SPEC** Maximum magnification: a strong 1:4.4 at 500mm will win over the affections of many nature shooters. **MOUNTS** Canon, Nikon, Pentax, Sigma, Sony **WEIGHT** 4.1 pounds **LENGTH** 10.0–12.4 inches **FILTER SIZE** 86mm **IMAGE STABILIZATION** Yes

SONY 70–400MM F/4–5.6 G SSM

★★★1/2 FULL-FRAME

AMATEUR PRO

$1,600, street, with hood, case and tripod collar Handsome matte-silver finish with three handy AF-stop buttons circling the barrel. A lengthy 105–600mm equivalent on Sony's APS-size bodies. **STANDOUT SPEC** Superb distortion control: 0.01% at 70mm; and 0.18% at 135mm and 400mm. **MOUNTS** Sony AF **WEIGHT** 3.5 pounds **LENGTH** 7.8–11.1 inches **FILTER SIZE** 77mm **IMAGE STABILIZATION** In the camera

TAMRON 70–300MM F/4–5.6 LD MACRO

STEAL

★★★ FULL-FRAME

AMATEUR PRO

$165, street, with hood At just a little over a pound, this should appeal to nature shooters looking to travel light. Sharp at the important apertures, with slight softening at the smallest ones and at longer focal lengths. **STANDOUT SPEC** The price is astoundingly little for such a long zoom lens. **MOUNTS** Canon, Nikon, Pentax, Sony **WEIGHT** 1.1 pounds **LENGTH** 4.75–6.1 inches **FILTER SIZE** 62mm **IMAGE STABILIZATION** No

TAMRON 200–500MM F/5–6.3 Di LD

★★ FULL-FRAME

AMATEUR PRO

$900, street, with hood, case, tripod collar, and filter adapter ring At 500mm, the lens will magnify to a satisfying 1:4.9. SQF tables showed excellent results at 200mm, but sharpness dropped at the longer focal lengths. **STANDOUT SPEC** Rotating collar that threads onto the front barrel for positioning filters—unique and useful. **MOUNTS** Canon, Nikon, Sony **WEIGHT** 2.6 pounds **LENGTH** 9.0–12.7 inches **FILTER SIZE** 86mm **IMAGE STABILIZATION** No

TOKINA AT-X 80–400MM F/4.5–5.6

GETTING OLD

★★1/2 FULL-FRAME

AMATEUR PRO

$500, street, with hood and built-in tripod collar Great price for this all-metal construction, sharp image quality, and surprisingly good distortion control. **STANDOUT SPEC** Lenshood is felt-lined, with spring loaded PL Assist to rotate filters without removing the hood—a filter fan's fantasy. **MOUNTS** Canon, Nikon **WEIGHT** 2.2 pounds **LENGTH** 5.3–7.6 inches **FILTER SIZE** 72mm **IMAGE STABILIZATION** No

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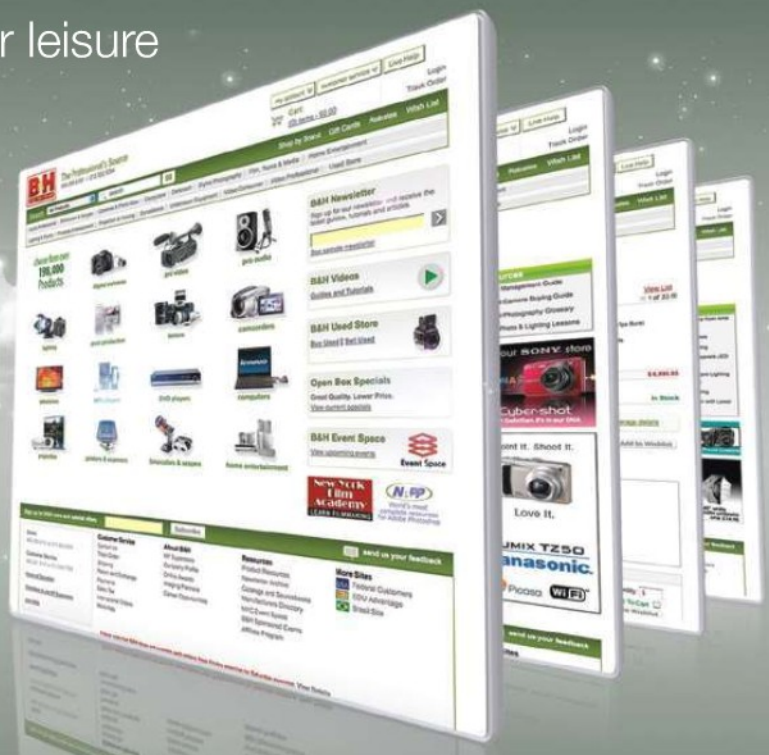

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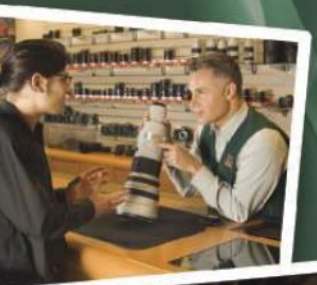

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Canon Powershot SD1200 IS

- 2.5" LCD Monitor
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- Dimensions 3.48 x 2.16 x 0.86"

*#CAPSSD1200** *Blue, Dark Grey, Light Grey, Green, Orange, Pink*

10 Mega Pixels

Canon Powershot S90 IS

- 3.0" LCD Monitor
- 3.8x Optical Zoom • 4x Digital Zoom
- 6-22.5mm f/2.0-4.9 (35mm equiv. 28-105mm) • SD/SDHC Card Slot
- RAW File Capture
- Dimensions 3.94 x 2.30 x 1.22"

*#CAPSS90**

10 Mega Pixels

Canon Powershot G11

- 2.8" Vari-Angle LCD
- 5x Optical Zoom • 5x Digital Zoom
- 6.1-30.5mm f/2.8-4.5 (35 equiv. 28-140mm) • SD/SDHC Card Slot
- RAW File Mode • E-TTL Flash Hot Shoe
- Dimensions 4.41 x 3 x 1.9"

*#CAPSG11**

10 Mega Pixels

FUJIFILM Finepix S200EXR

- 2.7" LCD Monitor • Super Macro
- 14.3x Optical Zoom • 4x Digital Zoom
- 7.1-101.5mm f/2.8-5.3 (35 Equiv. 30.5-436mm) • SD/SDHC Card Slot
- RAW and JPEG File Formats
- Dimensions 5.3 x 3.7 x 5.7"

*#FUFPS200EXR**

12 Mega Pixels

Nikon Coolpix S1000pj
with Built-in Projector

- 2.7" Wide-View LCD • 5x Optical Zoom
- 5-25mm f/3.9-5.8 (35mm Equiv. 28-140mm) • SD/SDHC Card Slot
- Projects 40" Images up to 5.5' Away
- Dimensions 2.5 x 4 x 0.9"

*#NICPS1000**

12 Mega Pixels

Nikon Coolpix P90

- 3" Vari-Angle LCD
- 24x Optical Zoom
- 4.6-110.4mm f/2.8-5 (35mm Equiv. 24-624mm) • SD/SDHC Card Slot
- 4-Way VR Image Stabilization
- Dimensions 3.3 x 4.53 x 3.9"

*#NICPP90**

12 Mega Pixels

OLYMPUS Stylus Tough-8000

- 2.7" LCD Monitor • Shockproof, Waterproof, Freezeproof, Crushproof
- 3.6x Optical Zoom • 5x Digital Zoom
- 5-18.2mm f/3.5-5.1 (35 Equiv. 28-102mm) • xD Card Slot
- Dimensions 3.7 x 2.4 x 0.85"

*#OLST8000** *Black, Silver*

12 Mega Pixels

Panasonic Lumix DMC-ZR1

- 2.7" LCD Monitor
- 8x Optical Zoom • 4x Digital Zoom
- 4.5-36mm f/3.3-5.9 (35 equiv. 25-200mm) Leica DC Vario-Elmarit
- SD/SDHC Card Slot
- Dimensions 2.14 x 3.85 x 1.02"

*#PADMCZR1** *Black, Blue, Red, Silver*

12 Mega Pixels

PENTAX Optio W80

- 2.5" LCD Monitor • SD/SDHC Card Slot
- 5x Optical Zoom • 6.25x Digital Zoom
- 5-25mm f/3.5-5.5 (35 Equiv. 28-140mm)
- Waterproof • Shockproof • Coldproof
- HD Movie HD Video Recording
- Dimensions 3.9 x 2.2 x 1.0"

*#PEOW80** *Blue, Grey, Red*

12 Mega Pixels

SONY CyberShot DSC-W180

- 2.7" LCD Monitor
- 3x Optical Zoom • 2x Digital Zoom
- 6.2-18.6mm f/2.5-5.1 (35 Equiv. 35-105mm) • MS Duo/Pro Duo Card Slot
- Smile Shutter Technology
- Dimensions 3.62 x 2.25 x 0.75"

*#SODSCW180**

10 Mega Pixels

SONY CyberShot DSC-TX1

- 3" Touch LCD • HD Movies
- 4x Optical Zoom • 4x Digital Zoom
- 6.18-24.7mm f/3.5-4.6 (35 Equiv. 35-140mm) Carl Zeiss Vario-Tessar
- MS Pro Duo/Pro HG Card Slot
- Dimensions 3.69 x 2.29 x 0.64"

*#SODSCTX1** *Blue, Grey, Pink, Silver*

10 Mega Pixels

SONY CyberShot DSC-HX1

- 3" LCD Monitor • HD Video Recording
- 20x Optical Zoom • 26x Digital Zoom
- 5-100mm f/2.5-5.6 (35 Equiv. 28-560mm) G-Lens • MS Duo/Pro Duo Card Slot
- Handheld Twilight Mode
- Dimensions 4.63 x 3.38 x 3.63"

*#SODSCHX1**

9 Mega Pixels

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8GB	33.39	72.50	24.95	29.50	—	34.95	54.95	67.50	149.50	31.95	—	79.95	—
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64GB	—	297.95	—	—	—	—	—	—	—	—	—	—	619.95

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2GB	19.50	14.95	24.50	—	13.95	—
4GB	21.95	18.95	29.99	—	17.95	—
8GB	34.95	29.95	43.89	—	29.99	45.39
16GB	59.95	67.95	74.79	—	60.69	89.95
32GB	126.95	153.95	—	—	162.95	199.95

SD Secure Digital

	Delkin			Kingston		Sandisk			Panasonic
	Std	Pro	Micro	Std	Micro	Std	Micro	Micro Ultra	20MBs Class 4
1GB	9.50	—	7.95	—	—	—	—	9.95	—
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XD xD Memory

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	Standard
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2GB	17.50

SD HC Secure Digital High Capacity

	Delkin				Kingston				Lexar			Panasonic		Sandisk					
	Class 2	Pro Class 4	Class 6	Micro	Standard Class 2	Class 4	Ultimate Class 6 133x	Micro Class 4	Standard Class 2	Platinum II Class 4 60x	Professional Class 6 133x	Standard Class 4 20 MBs	Class 10 22 MBs	Standard Class 2	Ultra Class 4	Extreme III Class 6 20MBs	Class 6 30MBs	Class 10 30MBs	Micro
4GB	17.50	—	14.95	14.95	—	12.95	—	13.50	10.99	14.95	31.99	12.95	22.50	11.95	16.95	34.95	44.95	—	15.95
8GB	21.99	—	22.50	27.95	19.95	12.95	46.95	19.95	34.95	24.50	59.95	23.95	44.50	19.95	29.95	54.95	—	74.99	27.79
16GB	42.99	—	42.95	83.50	—	36.89	88.95	—	62.50	44.95	—	47.95	84.95	—	49.95	—	124.95	—	48.79
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Panasonic Lumix DMC-GF1 D-SLR

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- HD Video Recording
- 3" Live View LCD
- Compact Micro 4/3 Design
- SD/SDHC Card Slot
- My Color + Film Mode
- Intelligent Exposure (iA) Mode
- Optional Electronic Viewfinder
- Advanced Dust Reduction Technology

*Kit with 14-45mm.....#PADMCGF11445**

12 Mega Pixels

OLYMPUS Evolt EP2 D-SLR

- Capture in JPEG or RAW
- HD Stills and Video with Live View
- 3" HyperCrystal LCD
- ISO 100-6400
- 4/3 Full Frame Zuiko Specific Lenses
- Advanced Dust Reduction
- SD/SDHC Card Slot
- Includes Removable Electronic Viewfinder

Black Kit with 14-42mm Zuiko Lens.....#OLEP21442B
Black Kit with 17mm f/2.8 Zuiko Lens.....#OLEP217B

12 Mega Pixels

OLYMPUS Evolt E30 D-SLR

- Capture in JPEG or RAW
- 2.7" Live View LCD
- 4/3 Full Frame Zuiko Specific Lenses
- Supersonic Wave Filter Anti-dust System
- CF & XD Dual Card Slots
- Scene Select Modes
- Art Filters & Multiple Exposure
- Shadow Adjustment • ISO 200-3200

Body Only.....#OLEE30
Kit with 14-42mm Zuiko Lens.....#OLEE301442

12 Mega Pixels

PENTAX K-x D-SLR

- Compact, Easy-to-Use, Entry-Level DSLR
- Still Images and 720p HD Video Capture • Digital Filters
- 2.7" TFT color LCD monitor
- Live View Function
- Uses Pentax AF Lenses (1.5x factor)
- SD/SDHC Card Slot • ISO 200-6400
- True High Dynamic Range (HDR) Imaging

Available in Black, Navy, Red or White
*Kit with 18-55mm Zoom Lens.....#PEKX1855**

12 Mega Pixels

SONY Alpha A850 D-SLR

- Dual BIONZ processing engines
- Full-frame Sensor
- 3" Xtra Fine LCD
- Uses Sony Alpha (compatible with Minolta) Lenses
- CF and MS Duo Card Slots
- High Sensitivity (ISO 6400)
- 3:2 and 16:9 Shooting
- Anti-Dust Technology
- HDMI output • 3 fps Burst
- Creative Styles

Body Only.....#SODSLRA850

24 Mega Pixels

SONY Alpha A500 D-SLR

- RAW & JPEG File Formats
- 3" TFT Photo Clear LCD Display
- Quick Auto Focus Live View
- Uses Sony A®lpha (compatible with Minolta) Lenses (1.5x factor)
- MS PRO Duo and SDHC Dual Card Slots
- Reduced Noise at ISO Up To 12,800
- 6 Scene Selection & 6 Style Modes

Body Only.....#SODSLRA500
Kit with 18-55mm.....#SODSLRA500L

12 Mega Pixels

OLYMPUS

Flash System

FL-20 Flash	$149.95
FL-36R Flash	$229.95
FL-50R Flash	$499.95
RF-11 Ring Flash	$249.95
SRF-11 Ring Flash Set	$559.95
TF-22 Twin Flash	$449.95
STF-22 Twin Flash Set	$739.95

Zuiko 4/3 System Digital Lenses

8/3.5 Fish-eye ED	$799.99
35/3.5 Macro ED (52ø)	$229.95
50/2.0 Macro ED (77ø)	$499.95
150/2.0 ED (82ø)	$2,499.95
300/2.8 ED	$6,999.95
7-14/4.0 ED (72ø)	$1,799.95
11-22/2.8-3.5 ED (72ø)	$799.95
12-60/2.8-4 ED SWD (72ø)	$999.95
14-42/3.5-5.6 ED (58ø)	$249.95
18-180/3.5-6.3 ED (62ø)	$499.95
35-100/2.0 ED (77ø)	$2,499.99
40-150/4-5.6 ED (58ø)	$279.95
50-200/2.8-3.2 ED SWD (67ø)	$1,199.95
90-250/2.8 ED (105ø)	$5,999.95
EC-14 1.4x Teleconverter	$439.95
EC-20 2x Teleconverter	$479.95
MF-1 OM Lens Adapter	$99.95

PENTAX

AF Flash System

AF-360FGZ	AF-540FGZ

SMCP-DA Digital AF Lenses

14/2.8 ED IF (77ø)	
15/4.0 ED AL (49ø)	
21/3.2 AL Limited "Pancake" (49ø)	
35/2.8 Macro Limited (49ø)	
40/2.8 Limited "Pancake" (49ø)	
55/1.4 Limited (58ø)	
70/2.4 Limited "Pancake" (49ø)	
200/2.8 ED IF	
300/4.0 ED IF SDM (77ø)	
10-17/3.5-4.5 ED IF (77ø)	
12-24/4 ED AL IF (77ø)	
16-45/4 ED AL (67ø)	
16-50/2.8 ED AL IF SDM (77ø)	
17-70/4.0 AL IF SDM (67ø)	
18-55/3.5-5.6 AL II (52ø)	
50-135/2.8 ED IF SDM (67ø)	
50-200/4-5.6 ED WR (52ø)	
55-300/4-5.8 ED (58ø)	
60-250/4.0 ED IF SDM (67ø)	

AF Lenses for 35mm & Digital SLRs

31/1.8 Limited (58ø)	
43/1.9 Limited "Pancake" (49ø)	
50/1.4 (49ø)	
50/2.8 Macro (52ø) with Case	
77/1.8 Limited (49ø)	
100/2.8 D FA Macro (49ø)	

SONY

Compatible with Maxxum D-SLRs

Flash System

HVL-F42AM	$299.99
HVL-F58AM	$499.99

Digital Lenses

16/2.8 Fish-eye	$849.99
20/2.8 (72ø)	$599.99
28/2.8 (49ø)	$269.99
35/1.4 (55ø)	$1,369.99
50/1.4 (55ø)	$369.99
50/2.8 Macro (55ø)	$479.99
85/1.4 Carl Zeiss (72ø)	$$1,369.99
100/2.8 Macro (55ø)	$679.99
135/1.8 Carl Zeiss (77ø)	$1,479.99
135/2.8 STF (72ø)	$1,249.99
300/2.8 G APO	$6,299.99
500/8 Reflex	$749.99
11-18/4.5-5.6 DT (77ø)	$699.99
16-35/2.8 ZA SSM Carl Zeiss (77ø)	$1,899.99
16-80/3.5-4.5 DT Carl Zeiss (62ø)	$749.99
16-105/3.5-5.6 DT (62ø)	$599.99
18-200/3.5-6.3 DT (62ø)	$529.99
18-250/3.5-6.3 DT (62ø)	$579.99
24-70/2.8 Carl Zeiss (77ø)	$1,599.99
70-200/2.8 G APO (77ø)	$1,799.99
70-300/4.5-5.6 G (62ø)	$849.99
75-300/4.5-5.6 (55ø)	$249.99
1.4x Teleconverter	$479.99
2x Teleconverter	$479.99

OLYMPUS
50mm f/2 Macro ED Zuiko Digital Lens

- *Exclusively designed for Digital SLRs*
- Ideal for not only macro photography but also as a portrait lens
- Magnification1:2
- ED glass element
- Min. focus 9.45"
- 52mm filter diameter
- Weight 10.6 oz

PENTAX
50-200mm f/4-5.6 SMCP-DA ED WR AF Digital Lens

- *Exclusively designed for Digital SLRs*
- Ideal for portraiture, sports and scenery
- Quick-Shift Focus System
- Min. focus 3.6'
- 52mm filter diameter
- Weight 9 oz

SONY
HVL-F58AM Shoe Mount Digital Flash

- Zoom Head (24-105mm)
- Bounce & Swivel Head
- Guide No. 190'
- TTL Dedication
- Vari-Power
- High-Speed Sync
- Auto WB Adjustment
- Wireless Ratio Control
- Weight 15.6 oz

SONY
16-80mm f/3.5-4.5 Carl Zeiss T* DT Digital Lens

- *Exclusively designed for Digital SLRs*
- Ideal for snapshots, portraits, interiors or outdoor scenery
- 35mm equiv. 24-120mm
- Min. focus 13.8"
- 62mm filter diameter
- Weight 15.5 oz

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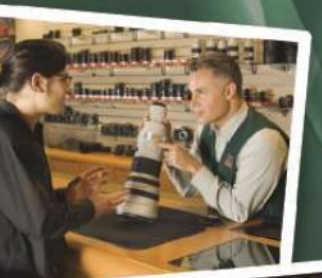

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Canon Digital Rebel XS D-SLR

- 2.5" LCD Monitor
- Live View Function
- Uses Canon EF Lenses (1.6x factor)
- SD/SDHC Card Slot
- Auto Lighting Optimizer
- ISO 100-1600
- USB 2.0
- Picture Style Settings
- Integrated Cleaning System
- 3 fps Continuous Shooting

Kit with 18-55mm ..... #CAEDRXSKB

10 Mega Pixels

Canon Digital Rebel T1i D-SLR

- HD 1080p, 720p, and VGA Video Capture
- 3" Clear View LCD with Live View
- Uses Canon EF Lenses (1.6x factor)
- SD/SDHC Card Slot
- 3.4 fps Continuous Shooting
- ISO Expandable to 12,800
- RAW and/or JPEG

Body Only.....#CAEDRT1I
Kit with 18-55mm IS..... #CAEDRT1IK

15 Mega Pixels

Canon EOS-50D D-SLR

- RAW and sRAW Image Capture
- 3" Clear View VGA LCD
- Live View Function
- Uses Canon EF Lenses (1.6x factor) • CF Card Slot
- "Picture Style" Settings
- HDMI output that enables the display of your photographs on any HDTV with HDMI ports
- Versatile Exposure Metering System

Body Only.....#CAE50D
Kit with 28-135mm IS USM Lens #CAE50D28135

15 Mega Pixels

Canon EOS-5D Mark II D-SLR

- Record HD Video • 1080p Movie Mode
- Full-Frame Sensor • Live View Mode
- 3" High Resolution LCD Display
- Uses Canon EF Lenses
- CF, MD Card Slot
- Dust & Weather-Resistant
- Self Cleaning Sensor
- 3.9 fps Burst Mode
- 9-point AF Sensor Array
- ISO Range 50-25600

Body Only.....#CAE5D2
Kit with 24-105mm IS.....#CAE5D224105

21 Mega Pixels

Canon EOS-7D D-SLR

- Record HD Video • 3" LCD
- Uses Canon EF Lenses
- CF, MD Card Slot
- Dust & Weather-Resistant
- Selectable Video Exposure and Frame Rates
- 19-Point, All Cross-Type AF System
- ISO 100-6400 (expandable to 12800) • 8 fps Burst Mode

Body Only.....#CAE7D
Kit with 28-135mm IS..... #CAE7D28135

18 Mega Pixels

Canon EOS-1D Mark IV D-SLR

- HD Video Recording
- Selectable Video Exposure + Frame Rates
- Self-Cleaning Sensor
- 3" LCD Monitor
- Uses Canon EF Lenses
- SD/SDHC & CF card slots
- 10 fps Burst Mode
- Dust & Weather Resistant
- 45 Point AF System
- High Sensitivity (ISO 102,400)

*Body Only.....#CAE1D4**

16 Mega Pixels

Canon SLR Lenses and Flashes

EOS Flash System (USA)

	IMP	USA
220EX	—	$99.95
270EX	—	$149.00
430EX II	—	$280.00
580EX II	—	$445.00
MR-14EX Ringlight	—	$495.00
MT-24EX Twin Flash	—	$729.95

EF-S Lenses for Digital Only
Compatible with the 20D, 30D, 40D, 50D & Digital Rebel only

	IMP	USA
60/2.8 USM Macro (52ø)	$409.95	$422.00
10-22/3.5-4.5 USM (77ø)	$699.00	$770.00
15-85/3.5-5.6 IS USM (72ø)	—	$720.00
17-55/2.8 IS USM (67ø)	$1,030.00	$1,060.00
17-85/4-5.6 IS USM (67ø)	CALL	CALL
18-55/3.5-5.6 IS (58ø)	$159.95	$170.00
18-135/3.5-5.6 IS (67ø)	—	$450.00
18-200/3.5-5.6 IS (72ø)	$574.95	$595.00
55-250/4.0-5.6 IS USM (58ø)	CALL	$255.00

EF Lenses

	IMP	USA
15/2.8	$634.00	$649.00
20/2.8 USM (72ø)	$459.95	$469.95
24/2.8 (58ø)	$329.95	$339.95
28/2.8 (52ø)	$249.00	$259.00
28/1.8 USM (58ø)	$449.00	$459.00
35/2 (52ø)	$289.00	$299.00
50/1.8 (52ø)	$89.95	$99.95
50/2.5 Macro (52ø)	$259.95	$265.00
50/1.4 USM (58ø)	$344.00	$349.00
MP-E 65/2.8 1x-5x Macro (58ø)	$929.00	$949.00
85/1.8 USM (58ø)	$369.95	$379.95
100/2 USM (58ø)	$429.95	$434.95
100/2.8 USM Macro (58ø)	$519.00	$529.00
135/2.8 (52ø)	$489.00	$499.00
28-105/3.5-4.5 II USM (58ø)	$219.95	$229.95
28-135/3.5-5.6 IS USM (72ø)	$399.95	$409.95
70-300/4-5.6 IS USM (58ø)	$529.00	$549.00
70-300/4.5-5.6 DO IS USM (58ø)	$1,229.00	$1,250.00
75-300/4.0-5.6 III (58ø)	CALL	$159.95
75-300/4.0-5.6 III USM (58ø)	$189.95	$200.00

TS-E MF Lenses

	IMP	USA
24/3.5 "L" II	CALL	$2,199.00
45/2.8	$1,249.00	$1,299.00
90/2.8	$1,199.00	$1,209.00

EF "L" Lenses

	IMP	USA
14/2.8 USM II	$2,100.00	$2,120.00
24/1.4 II (77ø)	$1,679.95	$1,699.00
35/1.4 USM (72ø)	$1,369.95	$1,399.95
50/1.2 USM (72ø)	$1,459.00	$1,479.00
85/1.2 USM II (72ø)	$1,950.00	$1,970.00
100/2.8 IS USM Macro (67ø)	—	$949.00
135/2.0 USM (72ø)	$980.00	$999.95
180/3.5 USM Macro (72ø)	$1,360.00	$1,370.00
200/2.8 USM (72ø)	$749.00	$769.00
200/2.0 IS USM (52ø)	$5,199.00	$5,300.00
300/4.0 IS USM (77ø)	$1,259.00	$1,269.00
300/2.8 IS USM (52ø rear)	$4,200.00	$4,340.00
400/5.6 USM (77ø)	$1,189.00	$1,209.00
400/2.8 IS (52ø rear)	$7,100.00	$7,190.00
500/4 IS USM (52ø rear)	$6,049.00	$6,140.00
600/4.0 IS (52ø rear)	$7,900.00	$8,050.00
16-35/2.8 USM II (82ø)	$1,499.00	$1,520.00
17-40/4.0 USM (77ø)	$729.00	$750.00
24-70/2.8 USM (77ø)	$1,279.00	$1,300.00
24-105/4 IS USM (77ø)	$1,049.00	$1,059.00
28-300/3.5-5.6 IS USM (77ø)	$2,399.00	$2,420.00
70-200/4.0 USM (67ø)	$624.00	$639.00
70-200/4.0 IS USM (77ø)	$1,189.00	$1,210.00
70-200/2.8 USM (77ø)	$1,289.00	$1,300.00
70-200/2.8 IS USM (77ø)	CALL	CALL
100-400/4.5-5.6 IS USM (77ø)	$1,589.00	$1,610.00
1.4x II Teleconverter	$299.00	$309.00
2x II Teleconverter	$299.00	$309.00

USA = Imported & Warrantied by Canon USA **IMP =** Imported & Warrantied by B&H (not qualified for Canon USA Rebates & Warranties)

Canon 580 EX II
Shoe Mount Flash

- Dust- & water-resistance
- Guide No. 190'
- Metal Hot Shoe
- E-TTL II, E-TTL, TTL & Manual
- Bounce & Swivel Head
- Zoom Head (24-105mm)
- Weight 13.2 oz

Canon 10-22mm f/3.5-4.5 EF-S USM
Digital Lens

- *Exclusively designed for Digital SLRs*
- 35mm equivalent 16-35mm
- Min. Focus 9.5"
- 3 aspherical lens elements
- 3.5-27 f/Stop Range
- 77mm filter diameter
- Weight 13.6 oz

Canon 17-55mm f/2.8 IS EF-S USM
Digital Lens

- *Exclusively designed for Digital SLRs*
- IS (Image Stabilizing) technology
- Min. Focus 13.8"
- 2.8-22 f/Stop Range
- Angle of View 78.3°-27.5°
- 77mm filter diameter
- Weight 22.4 oz

Canon 24-70mm f/2.8 EF "L" USM
Lens

- Sealed and gasketed against dust and moisture
- Internal Focusing
- UD Element
- Two Aspherical Elements
- 2.8-22 f/Stop Range
- Focus 1.25' to Infinity
- 77mm filter diameter
- Weight 33.6 oz

Nikon D3000 D-SLR

- Self Cleaning Sensor
- 3" LCD Monitor
- Accepts Nikon AF Lenses (1.5x factor)
- ISO 100-1600
- Fast Shutter Response
- SD, SDHC Card Slot
- In-camera Editing
- 3 fps Burst Mode
- 11-point Autofocus System
- Nikon Inc. limited warranty included

Kit with 18-55mm VR DX.....#NID30001855

10 Mega Pixels

Nikon D5000 D-SLR

- HD 720p Video Capture with Exposure Control
- 2.7" Vari-angle LCD • Live View Mode
- Uses Nikon AF Lenses (1.5x factor)
- SD/SDHC Card Slot
- In-Camera Image Editing
- Personal Picture Control Settings
- 4 fps Burst Mode
- GPS Geotagging (optional)
- Nikon Inc. limited warranty included

Body Only.....#NID5000
Kit with 18-55mm VR.....#NID50001855

12 Mega Pixels

Nikon D90 D-SLR

- D-Movie mode record 720p HD movie clips
- 3" LCD Monitor • Active D-Lighting
- Uses Nikon AF Lenses (1.5x factor)
- SD/SDHC Card Slot
- In-Camera Image Editing
- Scene Recognition System
- GPS geo-tagging • ISO 100-3200
- Self Cleaning Sensor • 4.5 fps Burst
- Nikon Inc. limited warranty included

Body Only.....#NID90
Kit with 18-105mm VR.....#NID9018105

12 Mega Pixels

Nikon D300s D-SLR

- Dust and Weather Resistant
- Self-Cleaning Sensor • 6 fps Burst
- HD Video Recording
- 3" LCD Monitor • Live View
- Accepts Nikon AF Lenses (1.5x factor) • Stereo Audio Input
- CF and SD/SDHC Card Slots
- 51-point AFs with 3D focus tracking
- ISO Sensitivity from 200 to 3200
- Nikon Inc. limited warranty included

Body Only.....#NID300S
Kit with 18-200mm VR II.....#NID300S18200

12 Mega Pixels

Nikon D700 D-SLR

- Self Cleaning Sensor • 5 fps Burst
- FX-format CMOS (full frame)
- 3" VGA LCD Monitor • Live View
- 51-point AF System
- Uses Nikon AF Lenses
- CompactFlash Card Slot
- Dust and Water Resistant
- Active D-Lighting Mode
- HDMI Video Out • ISO 6400
- Nikon Inc. limited warranty included

Body Only.....#NID700
Kit with 24-120mm VR.....#NID70024120

12 Mega Pixels

Nikon D3s D-SLR

- RAW/JPEGs & 720p HD Video @ 24fps
- FX-format (full-frame) CMOS Sensor
- In-Camera RAW Processing
- 3" 920,000-Dot LCD with Live View
- Compatible with Most Nikkor Optics
- Built Tough, Fully Weathersealed
- ISO Sensitivity up to 102,400
- Buffers Up to 48 RAW or 130 large JPEGs
- Dual CF Card Slots
- Nikon Inc. limited warranty included

Body Only.....#NID3S

12 Mega Pixels

Nikon SLR Lenses and Flashes

	IMP	USA
AF Flashes		
SB-400	CALL	CALL
SB-600	CALL	CALL
SB-900	CALL	CALL
R1 Wireless Twin Flash	CALL	CALL
R1C1 Wireless Twin Flash System	CALL	CALL
DX ED-IF Lenses for Digital Only		
10.5/2.8 Fish-Eye	$659.95	$694.95
35/1.8 G AF-S (52ø)	CALL	$199.95
85/3.5 G ED VR Micro (52ø)	—	CALL
10-24/3.5-4.5 G AF-S (77ø)	CALL	$799.95
12-24/4 G AF-S (77ø)	CALL	$999.95
16-85/3.5-5.6 G AF-S VR (67ø)	$609.95	$629.95
17-55/2.8 G AF-S (77ø)	CALL	$1,369.95
18-55/3.5-5.6 G AF-S II (52ø)	$99.95	$114.95
18-55/3.5-5.6 G AF-S VR (52ø)	$159.95	$179.95
18-70/3.5-4.5 G AF-S (67ø)	$389.95	$399.95
18-105/3.5-5.6 G AF-S VR (67ø)	CALL	$359.95
18-200/3.5-5.6 G AF-S VR II (72ø)	CALL	CALL
55-200/4-5.6 G AF-S (67ø)	$169.95	$179.95
55-200/4-5.6 G AF-S VR (67ø)	$219.95	$224.95

	IMP	USA
D-Type AF Lenses		
14/2.8 D ED	CALL	$1,719.95
16/2.8 D (39ø) with Hood	$889.95	$929.95
20/2.8 D (62ø)	$539.95	$564.95
24/2.8 D (52ø)	$349.95	$359.95
24/3.5 D ED PC-E (77ø)	$1,959.95	$1,989.95
28/2.8 D (52ø)	$244.95	$264.95
35/2.0 D (52ø)	$324.95	$359.95
45/2.8 D ED PC-E Micro (77ø)	CALL	$1,849.95
50/1.8 D (52ø)	$119.95	$124.95
50/1.4 D (52ø)	CALL	CALL
50/1.4 G AF-S (58ø)	CALL	CALL
60/2.8 D Micro (62ø) (1:1)	$459.95	$474.95
60/2.8 G AF-S ED Micro (62ø)	$519.95	$539.95
85/1.8 D (62ø) with Hood	$424.95	$449.95
85/1.4 D IF (77ø)	$1,149.95	$1,229.95
85/2.8 PC-E Micro (77ø)	$1,699.95	$1,779.95
105/2.8 G AF-S ED-IF VR Micro (62ø)	CALL	$889.95
105/2.0 DC D with Hood (72ø)	$999.95	$1,079.95
135/2.0 DC D (72ø)	CALL	$1,299.95
180/2.8 D ED-IF (72ø)	$849.95	$899.95
200/4 D ED-IF Micro w/Case (62ø)	$1,629.95	$1,649.95
200/2 G AF-S ED-IF VR (52ø)	CALL	$4,999.00

	IMP	USA
D-Type AF Lenses		
300/4.0 D AF-S ED-IF (77ø)	$1,399.95	$1,494.95
300/2.8 G AF-S VR (52ø-R)	CALL	CALL
400/2.8 G AF-S VR ED (52ø)	CALL	CALL
500/4.0 G AF-S VR ED (52ø)	CALL	CALL
600/4.0 G AF-S VR ED (52ø)	CALL	CALL
14-24/2.8 G AF-S ED-IF	$1,769.95	$1,799.95
17-35/2.8 (77ø)	CALL	$1,764.95
18-35/3.5-4.5 ED-IF (77ø)	$579.95	$599.95
24-70/2.8 G AF-S ED-IF (77ø)	CALL	$1,769.95
24-85/2.8-4.0 D (72ø)	$679.95	$699.95
24-120/3.5-5.6 G AF-S VR (72ø)	CALL	CALL
70-200/2.8 G AF-S ED-IF VR II (77ø)	CALL	CALL
70-300/4.0-5.6 G (62ø)	$134.95	$154.95
70-300/4.5-5.6 G-AFS VR (67ø)	$519.95	$539.95
80-200/2.8 D with Collar (77ø)	$1,069.95	$1,099.95
80-400/4.5-5.6 D VR (77ø)	CALL	$1,649.95
200-400/4 G AF-S ED-IF VR (52ø)	CALL	CALL
TC-14E II (1.4x) Teleconverter	CALL	CALL
TC-17E II (1.7x) Teleconverter	CALL	CALL
TC-20E II (2x) Teleconverter	CALL	CALL

USA = Imported & Warrantied by Nikon USA (AF lenses include 1 year warranty plus 4 years extended service coverage)

IMP = Imported & Warrantied by B&H (not qualified for Nikon USA Rebates & Warranties)

Nikon 10-24mm f/3.5-4.5 DX AF-S Digital Lens

- *Exclusively designed for Digital SLRs*
- ED (Extra-low Dispersion)
- Super Integrated Coating
- Silent Wave Motor
- 35mm equiv. 15-36mm
- Min. focus 0.8'
- 77mm filter diameter
- Weight 16.2 oz

Nikon 24-70mm f/2.8 G AF-S ED-IF Lens

- Optimized for edge-to-edge sharpness on both the Nikon FX (full-frame) and DX-format image sensors
- Rugged construction, dust and moisture resistance
- Minimum focus 1.2'
- 77mm filter diameter
- Weight 32 oz

Nikon 18-200/3.5-5.6 DX G VR II AF-S ED-IF Digital Lens

- *Exclusively designed for Digital SLRs*
- 35mm equiv. 27-300mm
- **VR II** Vibration Reduction
- SWM (Silent Wave Motor)
- 3.5-22 f/Stop Range
- Focus 1.6' to Infinity
- 72mm filter diameter
- Weight 19.8 oz

Nikon SB-900 Speedlight i-TTL Shoe Mount Flash

- Guide No. 131'
- Recycling Time 4.5 Secs
- Bounce & Swivel Head
- Zoom Head (17-200mm)
- Stroboscopic Effect
- AF-Assist Illuminator
- Safety lock on flash shoe
- Weight 14.6 oz

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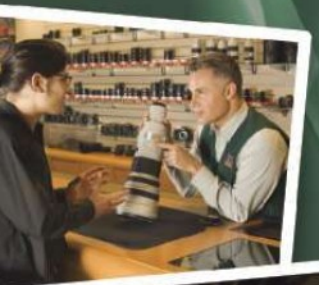

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TAMRON AF LENSES

6-Year Warranty

Di – for both digital & film SLR cameras • Di-II – for Digital SLRs Only

C = Canon N = Nikon P = Pentax SM = Sony/Minolta ** Price After Rebate

		SKU #	Available for	Rebate	Price
Di-II	60/2.0 LD IF Macro (55ø)	#TA602DI*	C, N, SM	$25	$544.00**
Di	90/2.8 Macro (55ø)	#TA9028M*	C, N, P, SM	—	$499.00
Di	180/3.5 LD IF Macro (72ø)	#TA18035*	C, N, SM	$50	$689.00**
Di-II	10-24/3.5-4.5 (77ø)	#TA102435*	C, N, P, SM	—	$499.00
Di-II	17-50/2.8 XR LD IF Aspherical (67ø)	#TA175028*	C, N, P, SM	—	$499.00
Di-II	17-50/2.8 XR VC LD IF Asph. (67ø)	#TA175028*Q	C, N	$25	$624.00**
Di-II	18-200/3.5-6.3 (62ø)	#TA1820035*	C, N, P, SM	$60	$239.00**
Di-II	18-250/3.5-6.3 (62ø)	#TA1825035*	C, N, P, SM	—	$499.00
Di-II	18-270/3.5-6.3 VC	#TA1827035*	C, N	$50	$579.00**
Di	28-75/2.8 XR (67ø)	#TA287528*	C, N, P, SM	$10	$489.00**
	28-80/3.5-5.6 (58ø)	#TA288035*	C, N, P, SM	—	$89.00
Di	28-200/3.8-5.6 Asp XR IF Macro (62ø)	#TA2820038*	C, N, P, SM	$50	$249.00**
Di	28-300/3.5-6.3 XR VC (62ø)	#TA283003563*	C, N	—	$629.00
Di-II	55-200/4-5.6 LD Macro (52ø)	#TA55200456*	C, N, SM	$40	$159.00**
Di	70-200/2.8 LD IF Macro (77ø)	#TA7020028M*	C, N, P, SM	—	$769.00
	75-300/4.0-5.6 LD (62ø)	#TA753004*	C, N, P, SM	—	$164.00
Di	200-500/5-6.3 LD IF (86Cø)	#TA20050056*	C, N, SM	$30	$919.00**

Tokina AF LENSES

DX – for Digital SLRs Only

		Canon EOS	Nikon AF	Price
DX	35/2.8 Pro Macro (55ø)	#T03528PDX	#T03528PDX	$399.95
DX	10-17/3.5-4.5 ATX Fisheye	#T0101735	#T0101735	$579.95
DX	11-16/2.8 Pro (77ø)	#T01116PDX	#T01116PDX	$599.95
DX	12-24/4.0 Pro II (77ø)	#T012244DX	#T012244DX	$499.95
DX	16-50/2.8 Pro (77ø)	#T0165028DX	#T0165028DX	$549.95
DX	16.5-135/3.5-5.6 (67ø)	#T0165135DX	#T0165135DX	$569.95
DX	50-135/2.8 (67ø)	—	#T05013528	$529.95

FLASHES

Metz

28 AF-3 TTL Digital Shoe Mount Flash	$93.95
28 CS-2 Digital Slave Shoe Mount Flash	$119.95
54 MZ-4 TTL Standard Shoe Mount Flash	$299.95
58 AF-1 TTL for Canon Digital Shoe Mount Flash	$399.95
58 AF-1 TTL for Nikon Digital Shoe Mount Flash	$399.95
45 CL-4 TTL Digital Handle Mount Flash Kit**	$649.95
76 MZ-5 TTL Digital Handle Mount Flash**	$999.95

** with battery and charger

QUANTUM

Q-flash TRIO	$875.00	Q-flash T5D-R	$673.00
Q-flash T5D-Rwith Turbo Battery			$1,081.95
Q-flash T5D-Rwith Turbo 2x2 Battery			$1,242.95

Batteries

Battery 1 Compact			$124.95
Battery 1	$214.95	Battery 2	$258.95
Turbo Battery	$389.00	Turbo Compact	$423.00
Turbo SC Compact with Charger			$444.00

SUNPAK

RD-2000 Shoe Mount Flash	$68.95
PZ-4000 AF TTL Shoe Mount Flash	$109.95
PF-30x TTL Shoe Mount Flash for Nikon, Canon	$69.85
PZ-40x II AF TTL Shoe Mount Flash (Blk or Slvr)	$148.95
PZ-42x II AF TTL Shoe Mount Flash for Canon or Nikon	$149.95
622 Super Pro TTL Handle Mount Flash	$197.50
622 Super Pro TTL Handle Mount w/Zoom Head	$246.00

Vivitar

285HV Professional Auto	$89.95
Pearstone SB-4 AC Adapter #PESB4	$22.95

SIGMA AF LENSES & FLASHES

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All Sigma cameras, lenses & flashes are made exclusively in Japan.

DC – for Digital SLRs Only • DG – Optimized for Digital SLRs

H – HSM Model with Canon, Nikon, Sigma
R – Rear Slip-in Gelatin Filter Slot

		Canon	Nikon	Olympus	Pentax	Sigma	Sony/Minolta	Price
DC	4.5mm f/2.8 EX Circular Fisheye HSM R	#SI4528EXDCC	#SI4528EXDCN	—	#SI4528EXDCP	#SI4528EXDCSI	#SI4528EXDSO	$999.00
DG	8/3.5 EX Circular Fish-Eye R	#SI835CA	#SI835NA	—	—	#SI835SI	—	$899.00
DC	10mm f/2.8 EX Fisheye HSM R	#SI1028EXDCC	#SI1028EXDCN	—	#SI1028EXDCP	#SI1028EXDCSI	#SI1028EXDCSO	$649.00
DG	15/2.8 EX Diagonal Fish-Eye R	#SI1528DGCAF	#SI1528DGNAF	—	#SI1528DGPAF	#SI1528DGSA	#SI1528DGMAF	$609.00
DG	20/1.8 EX DF RF Aspherical (82ø)	#SI2018CAF	#SI2018NAF	—	#SI2018PAF	#SI2018SA	#SI2018MAF	$519.00
DG	24/1.8 EX DF Aspherical Macro (77ø)	#SI2418MCAF	#SI2418MNAF	#SI2418MOAF	#SI2418MPAF	#SI2418MSA	#SI2418MMAF	$449.00
DG	28/1.8 EX DF Aspherical Macro (77ø)	#SI2818MCAF	#SI2818MNAF	—	#SI2818MPAF	#SI2818MSA	#SI2818MMAF	$349.00
DC	30mm f/1.4 EX HSM (62ø)	#SI3014DCCAF	#SI3014DCNAF	#SI3014DCOAF	#SI3014DCPAF	#SI3014DCSA	#SI3014DCMAF	$439.00
DG	50mm f/1.4 EX (77ø) H	#SI5014C	#SI5014N	#SI50140L	#SI5014PE	#SI5014SI	#SI5014SOM	$499.00
DG	50/2.8 EX Macro (55ø)	#SI5028MDGCAF	#SI5028MDGNAF	—	#SI5028MDGPAF	#SI5028MDGSA	#SI5028MDGMAF	$299.00
DG	70/2.8 EX Macro (62ø)	#SI7028MDGCA	#SI7028MDGNA	—	#SI7028MDGPA	#SI7028MDGSA	#SI7028MDGSAQ	$499.00
DG	105/2.8 EX Macro (58ø)	#SI10528MDGCA	#SI10528MDGNA	#SI10528MDGOA	—	#SI10528MDGSA	#SI10528MDGMA	$479.00
DG	150/2.8 EX APO Macro HSM (72ø)	#SI15028AMDGC	#SI15028AMDGN	#SI15028AMDGO	—	#SI15028AMDGS	—	$729.00
DG	300/2.8 APO EX HSM	#SI30028DGCAF	#SI30028DGNAF	—	#SI30028DGPAF	#SI30028DGSA	#SI30028DGMAF	$2,999.00
DC	10-20/4-5.6 EX HSM (77ø)	#SI102045DCAF	#SI102045DNAF	#SI102045DOLP	#SI102045DPAF	#SI102045DSA	#SI102045DMAF	$479.00
DC	10-20/3.5 EX HSM (82ø)	#SI102035C	#SI102035SN	—	#SI102035P	#SI102035SG	#SI102035S	$649.00
DG	12-24/4.5-5.6 EX R H	#SI122445CAF	#SI122445NAF	—	#SI122445PAF	#SI122445SA	#SI122445MAF	$859.00
DC	17-70/2.8-4.5 Macro (72ø)	#SI177028DCCA	#SI177028DCN	—	#SI177028DCPA	#SI177028DCSA	#SI177028DCMA	$369.00
DC	18-50/2.8-4.5 OS (67ø)	#SI185028DOC	#SI185028DON	—	#SI185028DOP	#SI185028DOSG	#SI185028DOS	$199.00
DC	18-50/2.8 EX Macro (72ø)	#SI185028MCAF	#SI185028DCHN	#SI185028MOAF	#SI185028MPAF	#SI185028MSAF	#SI185028MSAQ	$419.00
DC	18-125/3.8-5.6 OS (Optical Stabilizer) (67ø) H	#SI1812535OSC	#SI1812535OSN	—	#SI1812535OSP	#SI1812535OSI	#SI1812535OSS	$339.00
DC	18-200/3.5-6.3 IF Aspherical (62ø)	#SI1820035CAF	#SI182003563N	—	#SI1820035PAF	#SI1820035SA	#SI1820035MAF	$299.00
DC	18-200/3.5-6.3 OS (Optical Stabilizer) (72ø)	#SI1820035C	#SI1820035N	—	—	#SI1820035S	—	$399.00
DC	18-250/3.5-6.3 OS HSM (72ø)	#SI1825035C	#SI1825035N	—	#SI1825035P	#SI1825035S	#SI1825035CSN	$529.00
DG	24-70/2.8 EX Aspherical (82ø)	#SI247028DGCA	#SI247028DGNA	—	#SI247028DGPA	#SI247028DGSS	#SI247028DGMA	$569.00
DG	24-70/2.8 EX IF HSM (82ø)	#SI247028C	#SI247028NF	—	#SI247028PS	#SI247028S	#SI247028SM	$899.00
DG	28-70/2.8 EX (67ø)	#SI287028DGCA	#SI287028DGNA	—	#SI287028DGPA	#SI287028DGSA	—	$349.00
DC	50-150/2.8 EX HSM II (67ø)	#SI5015028EXC	#SI5015028EXN	—	#SI5015028PAF	#SI5015028EXS	#SI5015028MAF	$749.00
DC	50-200/4-5.6 OS HSM (55ø)	#SI5020045DOC	#SI5020045DON	—	#SI5020045DOP	#SI5020045DOS	—	$199.00
DG	50-500/4-6.3 EX APO RF (86Cø) H	#SI5050046CAF	#SI5050046NAF	#SI50500460AF	#SI5050046PAF	#SI5050046SA	#SI5050046MAF	$1,059.00
DG	70-200/2.8 EX Macro II HSM (77ø)	#SI7020028C	#SI7020028N	#SI70200280LP	#SI7020028PSA	#SI7020028S	#SI7020028SO	$799.00
DG	70-300/4-5.6 DL Macro Super II (58ø)	#SI703004SCAF	#SI70300456N	—	#SI703004PAF	#SI703004SA	#SI703004MAF	$159.00
DG	70-300/4-5.6 APO Macro Super II (58ø)	#SI703004DGCA	#SI70300456AN	—	#SI703004DGPA	#SI703004DGSA	#SI703004DGMA	$209.00
DG	120-300/2.8 EX APO IF HSM (105ø)	#SI120300DGCA	#SI120300DGNA	—	—	#SI120300DGSA	—	$2,999.00
DG	120-400/4.5-5.6 APO OS HSM (77ø Rear)	#SI120400C	#SI120400N	—	#SI120400PAF	#SI120400S	#SI120400MAF	$899.00
DG	150-500/5-6.3 APO OS HSM	#SI150500C	#SI150500N	—	#SI150500P	#SI150500S	#SI150500M	$999.00
DG	300-800/5.6 APO EX HSM	#SI300800DGCA	#SI300800DGNA	#SI300800DGOA	—	#SI300800DGSA	—	$8,699.00
DG	1.4x EX APO Tele-Converter	#SI1.4XDGCAF	#SI1.4XDGNAF	—	#SI1.4XDGPAF	#SI1.4XDGSA	#SI1.4XDGMAF	$249.00
DG	2x EX APO Tele-Converter	#SI2XDGCAF	#SI2XDGNAF	—	#SI2XDGPAF	#SI2XDGSA	#SI2XDGMAF	$299.00
DG	EF-530 ST Flash	#SIEF530STC	#SIEF530STN	—	#SIEF530STP	#SIEF530STS	#SIEF530STSM	$149.00
DG	EF-530 Super Flash	#SIEF530C	#SIEF530N	—	#SIEF530P	#SIEF530S	#SIEF530SM	$219.00
DG	EM-140 TTL Ringlight	#SIEM140DGC	#SIEM140DGN	—	#SIEM140DGP	#SIEM140DGS	#SIEM140DGM	$379.00

SIGMA
18-200mm f/3.5-6.3 DC OS Digital Lens

- *Exclusively designed for Digital SLRs*
- Focus 1.5' to Infinity
- Mag. ratio of 1:3.9
- 72mm filter diameter
- Weight 21.6 oz

SIGMA
18-50mm f/2.8 EX Macro DC Digital Lens

- *Exclusively designed for Digital SLRs*
- Minimum focus 7.9"
- Super Multi Layer (SML)
- 72mm filter diameter
- Weight 15.9 oz

TAMRON
60mm f/2.0 LD IF Macro Di-II Digital Lens

- *Exclusively designed for Digital SLRs*
- Minimum Focus 9.1'
- 55mm filter diameter
- Weight 14.1 oz

Tokina
11-16mm f/2.8 Pro DX AT-X Fisheye Digital Lens

- *Exclusively designed for Digital SLRs*
- WR (Water Repellent) coating
- Minimum Focus 1'
- Magnification ratio 1:11.6
- Weight 1.2 lb

BAGS & CASES

DPS 3N1 Sling/Backpacks

3N1 bags provides fast equipment access and ultimate freedom, allowing 3 carrying options in one while morphing from sling to backpack and back again fast and easy.

	10 Small	20 Med.	30 Large
SKU #	#KA31SBS	#KA31SBM	#KA31SBL
Color	Black	Black	Black
HOLDS SLRs	1	1	1
HOLDS Lens/Flash	2	4	6
HOLDS Accessories	Yes	Yes	Yes
Price	**$84.95**	**$99.95**	**$124.95**

lowepro Fastpack Backpacks

Protects your equipment and provides storage for accessories. Side-entry compartments let you quickly access gear and accessories, even while you're on the move.

	200	250	350
SKU #	#LOFP200*	#LOFP250*	#LOFP350*
Color	Black, Blue, Red		
HOLDS SLRs	1	1	1
HOLDS Lens/Flash	3	4	4
HOLDS Laptop	No	15.4"	17.4"
Price	**$66.29**	**$74.99**	**$112.95**

tamrac Aero Backpacks

Speed Pack's Dual Entry System allows camera access via side door or front panel. Weatherproof exterior and foam padded interior compartments for a custom equipment fit.

	Speed Pack 75	Speed Pack 85
SKU #	#TA3375*	#TA3385*
Color	Black, Rust	
HOLDS SLRs	1	1
HOLDS Lens/Flash	3	4
HOLDS Laptop	No	17"
Price	**$89.95**	**$119.95**

TRIPODS

GITZO Explorer Series

Six Layer, pultrusion (spun), 100% carbon fiber tubes, "G Lock" leg locks. Legs and center column. Can belocked at a wide range of angles making it the perfect wilderness field tripod. Requires Head.

	GT2531EX	GT2541EX
SKU #	#GIGT2531EX	#GIGT2541EX
Load Capacity	26.4 lbs	26.5 lbs
Max. Height	66.9"	64.6"
Folded Length	25.2"	21.3"
Weight	4.1 lbs	4.1 lbs
Price	**$624.95**	**$674.95**

Manfrotto 190X Series

Improved castings for reduced weight without compromising strength and stability. XB feature slow angle adapter, XProB features vertical/horizontal quick flip center column. Requires Head.

	190XDB	190XB	190XPROB
SKU #	#MA190XDB	#MA190XB	#MA190XPROB
Load Capacity	11 lbs	11 lbs	11 lbs
Max. Height	57.5"	57.1"	57.5"
Folded Length	21"	20.9"	22.4"
Weight	3.5 lbs	4 lbs	4 lbs
Price	**$98.95**	**$129.95**	**$159.95**

Manfrotto 055X Series

Similar in design and features to the 190X series but with increased operating height & max load capacity. 055XB features low angle adapter, 055XproB features vertical/horizontal quick flip center column. Requires Head.

	055XDB	055XB	055XPROB
SKU #	#MA055XDB	#MA055XB	#MA055XPROB
Load Capacity	15.4 lbs	15.4 lbs	15.4 lbs
Max. Height	70"	70"	70.3"
Folded Length	24"	24"	25.7"
Weight	4.6 lbs	5 lbs	5.3 lbs
Price	**$139.95**	**$165.00**	**$180.00**

FILTERS

SINGH-RAY Filters in stock

HOYA

B&H SPECIAL! Buy 3 or more Hoya Filters & Get 10% Off.

	52mm	58mm	67mm	72mm	77mm
UV, Skylight (1B)	$13.35	$14.85	$22.35	$34.35	$38.85
UV, Skylight (1B) HMC	$19.35	$22.35	$32.85	$40.35	$49.35
UV, Skylight (1B) Super HMC	$26.85	$35.85	$41.85	$52.35	$56.85
Circular Polarizer	$35.85	$40.35	$58.35	$70.35	$82.35
Circular Polarizer HMC	$70.35	$76.35	$92.85	$130.35	$169.35
Circular Polarizer Ultra Thin Super HMC	$74.85	$83.85	$101.85	$149.85	$187.35
"Moose" Warm Circular Polarizer	$50.85	$59.85	$86.85	$107.85	$128.85
80A, B, C, 81A, B, C, 82A, B, C, 85, B, C	$20.85	$32.85	$40.35	$49.35	$61.35
K2 Yel, X0 Yel/Grn, Grn X1, Or G, Red 25A	$17.85	$20.85	$32.85	$40.35	$49.35
K2 Yel, X0 Yel/Grn, Grn X1, Or G, Red 25A HMC	$23.85	$26.85	$38.85	$46.35	$56.85
Close Up Set	$40.35	$49.35	$68.85	$88.35	$97.35
Intensifier – Blue, Green Field, Enhancement (Red)	$49.35	$62.85	$70.35	$83.35	—
Neutral Density 2x, 4x, 8x	$17.85	$20.85	$32.85	$40.35	$49.35
Neutral Density 2x, 4x, 8x HMC	$23.85	$26.85	$38.85	$46.35	$56.85
Star 6, Star 8	$23.85	$26.85	$40.35	$46.35	$53.85

heliopan

Made exclusively with glass from Schott (Zeiss) the world's finest optical glass supplier.

	55mm	58mm	67mm	72mm	77mm
Skylight (1B), UV	$39.99	$41.99	$62.99	$77.99	$89.99
Skylight (1B), UV SH-PMC	$72.99	$78.99	$103.99	$131.99	$157.99
Circular Polarizer	$109.99	$116.99	$145.99	$173.99	$187.99
Circular Polarizer SH-PMC	$155.99	$165.99	$206.99	$233.99	$261.99
#5, #8, #11, #13, #15, #22, 81A, 81B, 81C	$49.99	$51.99	$78.99	$96.99	$108.99
Digital Filter	$176.99	$180.99	$222.99	$261.99	$301.99

B+W

B&H SPECIAL! Buy 3 or more B+W Filters & Get 5% Off.

	55mm	58mm	67mm	72mm	77mm
UV, KR1.5	$25.95	$25.95	$38.95	$44.95	$51.95
UV, KR1.5 Multi-Coated	$39.95	$39.95	$54.95	$68.50	$93.95
Circular Polarizer	$66.95	$68.95	$86.50	$99.50	$111.95
Circular Polarizer Multi-Coated	$96.50	$99.50	$124.50	$143.50	$169.95
81A, B, KR3, 6, 12, 15	$25.95	$25.95	$38.95	$44.95	$51.95
KB1.5, 3, 6, 12, 15, 20	$25.95	$25.95	$38.95	$44.95	$51.95
#021, 023, 041, 060, 061, 090	$25.95	$25.95	$38.95	$44.95	$51.95
Graduated (N.D. & Colors)	$52.95	$54.95	$64.95	$74.95	$92.95
ND .9, 1.8, 3.0, 4.0, 6.0	$44.95	$44.95	$69.95	$89.50	$99.95
Enhancing	$43.95	$45.95	$74.95	$94.95	$104.95
Close-Up Lenses 0.25 – 5.0	$25.95	$25.95	$38.95	$44.95	$51.95

TIFFEN

10 Year Warranty Made in USA

B&H SPECIAL! Buy 3 or more Tiffen Filters & Get 10% Off. (not valid on Kits).

	52, 55mm	58mm	62, 67mm	72, 77mm	82mm
Hot Mirror (for Digital Cameras)	$71.95	$85.95	$13.95	$195.95	$307.95
UV Protector	$10.95	$12.39	$15.95	$31.95	$48.95
UV Protector Thin Wide-Angle	—	$19.99	$24.99	$50.95	—
Skylight (1A), UV Haze 1	$11.49	$13.99	$17.99	$32.49	$48.49
Circular Polarizer (Rotating mount)	$35.95	$37.95	$51.95	$68.95	$118.95
Color Conversion 80A, 80B, 81A, 81B	$15.49	$16.99	$31.49	$42.99	$57.95
Close-Up Lens Sets (+1, +2 & +4)	$49.49	$62.95	$81.95	$115.95	—
#812 Warming	$15.49	$22.99	$31.49	$42.99	$57.95
Enhancing	$68.95	$101.95	$106.95	$123.95	$134.95
Neutral Density 0.3, 0.6, 0.9	$15.49	$16.99	$23.99	$42.99	$57.95

FILM – B&W AND COLOR

COLOR PRINT FILM

	Kodak Gold – GA 100 IMP	Kodak Gold – GB 200 IMP	Kodak Max – GC 400 IMP	IMP Imported from Europe / USA Manu-factured in USA for Domestic Distribution	FUJIFILM Reala CS 100	Superia CA 200	Superia CH 400	Superia CZ 800	Press CZ 800
135-24	2.19	—	1.99		—	1.99	2.15	3.95	—
135-36	—	2.99	2.99		5.50	1.99	1.99	—	2.99

	Kodak Portra 160NC	Portra 160VC	Portra 400NC	Portra 400VC	Ektar 800	Ektar 100	FUJIFILM Pro 160C	Pro 160S	Pro 400H	Pro 800Z
135-36	4.69	5.79	5.79	5.99	7.50	4.35	5.75	5.50	5.50	5.99
120 Roll	3.69	3.99	4.30	4.30	5.99	3.69	3.79	3.50	3.75	4.39
220 PP (5)	48.70	—	49.95	42.95	—	—	7.50	7.50	7.99	7.99

PROCESSING MAILERS

Fuji Slide Processing

36 Exposures (35mm) 5.39

AGFA Processing

	35mm	120	220
Slide E6	9.49	9.49	18.95
Print C41	13.49	15.49	30.95
B&W	16.75	16.75	—

COLOR SLIDE FILM

	Kodak Ektachrome Professional EPY 64 Tungsten	Ektachrome Professional E Series 100 VS	Ektachrome Professional E Series 100 G	Ektachrome Professional E Series 200	Ektachrome Professional E Series EPP 100	FUJIFILM Fujichrome Sensia RA 100	Fujichrome Sensia RM 200	Fujichrome Sensia RH 400	Velvia RVP Pro 50	Velvia RVP 100	Astia RAP100F
135-36	13.50	6.99	7.50	9.95	14.95	5.49	6.49	9.95	6.86	6.25	5.80
120 Roll	7.95	5.25	5.59	—	7.99	—	—	—	4.89	4.59	3.99
220 PP (5)	—	54.95	—	—	—	—	—	—	9.99	8.99	8.39

	Fujichrome Professional RDP100F	Provia RXP III 400X	Tungsten RTP T64
135-36	5.75	8.95	8.29
120 Roll	3.89	5.99	4.79
220 PP (5)	8.39	—	—

BLACK & WHITE PRINT FILM

	Kodak Plus-X 125	Tri-X 400	TMX 100	TMY 400	TMZ 3200	BW 400 CN	ILFORD Pan F+ 50	FP4+ 125	HP5+ 400	Delta Pro 100	Delta Pro 400	Delta Pro 3200	XP-2 Super 400	FUJIFILM Infrared SFX 200	AGFA Acros 100	Neopan 400	Neopan 1600	SLIDE Scala 200
135-36	4.25	3.45	3.99	3.89	6.95	4.29	5.69	5.09	3.99	5.31	5.52	7.07	5.64	6.95	3.95	3.75	4.19	12.95
120 Roll	—	3.75	3.95	3.59	—	4.49	4.21	3.97	3.58	3.90	4.12	4.88	4.11	6.95	2.95	2.95	—	—

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▲Sunlit Portrait

Andre de Dienes, who built a highly successful career photographing women both in and out of their clothes, shot this cover featuring model Dorothy Sparkman. He used an 8x10 Ansco Universal View Camera with a 12-inch Goerz Dagor f/6.8 lens. His exposure on Daylight Kodachrome was 1/5 sec at f/11. The picture was shot in daylight on the roof of the building in which de Dienes had his studio.

60 YEARS AGO

Pop Photo profiled photographer Victor Keppler, father of our own Herbert Keppler.

▼Canon's Innovative 35

Japan's Canon camera company was founded during the 1930s to create a worthy competitor to Leica. This model, the Canon II B—developed after World War II—marked the U.S. debut of a major new player in 35mm photography.

This advertisement highlighted a combined range- and viewfinder with a unique three-position magnifier for critical focusing. The company also offered top-quality lenses from 35mm to 135mm in Leica-compatible screw mounts. The camera with a normal 50mm Serenar f/1.9 lens listed for $249.

Medium-Format Jewel ▶

Serious photographers looking for a medium-format (120 roll film) SLR could consider this Primar-Reflex produced by Bentzin Camera Works in East Germany. This was a version of the pre-war Primarflex updated with coated lenses. You could use roll film, cut film, or plates, and it sported a focal-plane shutter with speeds to 1/1000 sec, along with built-in flash sync. The Primar-Reflex, delicate and with limited appeal, never survived the arrival of the more robust, better-finished Hasselblad. Price with 10cm Carl Zeiss Tessar f/3.5 lens: $295.

Poor Man's TLR ▼

The hot medium-format camera of the 1950s? The $260 Rolleiflex. Enterprising firms soon introduced economical lookalikes such as this $59.50 Star-D model from Davidson Mfg. Co. The lens was a Wollensak f/3.5 in a flash-sync Alphax shutter. A geared focusing system coupled the camera's viewing and taking lenses.

—Harold Martin

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The Next Generation of Touch Display

The 12MP COOLPIX S70 features Nikon's newly developed 3.5-inch Clear Color Display and a new generation of touch-screen controls that offer an enhanced shooting and playback experience. In addition to its photographic technology and stylish dual-texture design, the S70 captures stunning HD video at 1280 x 720 pixels (720p). The COOLPIX S70 sports a 5x wide-angle Zoom-NIKKOR lens; ISO 6400***; 5-way VR Image Stabilization System; Subject Tracking; Scene Auto Selector Mode; Nikon's Smart Portrait System and an ultra-stylish design. The touch-screen makes viewing and retouching images more fun and efficient.
Nikon, Inc. limited warranty included 2010 Nikon Inc.

COOLPIX S1000pj

Your Personal Theater on the Go

A new 24x Zoom-NIKKOR lens for the COOLPIX P90 covers a broad focal range of 26mm wide-angle through 624mm super-telephoto (35mm format equivalent). The clarity of these precision optics combine with 12.1 effective megapixels and advanced Nikon digital image-processing to faithfully reproduce fine details and subtle tones, offering extended light sensitivity settings as high as ISO 6400 and image sensor shift VR image stabilization.
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COOLPIX S570

Style Meets Simplicity

The new COOLPIX S570 is ideal for entry-level consumers looking for a carefree shooting experience. The S570 features 12.0 megapixels; a 5x wide-angle Zoom-NIKKOR glass lens; ISO 3200 at full resolution; a bright 2.7-inch LCD Display; 4-way VR Image Stabilization System; Scene Auto Selector Mode; Nikon's Smart Portrait System and movie mode.
Nikon, Inc. limited warranty included 2010 Nikon Inc.

D3000

Incredible Pictures. Incredibly Easy

The 10.2 MP D3000 offers everyone the ability to discover the superiority of D-SLR photography at an affordable price point. It features an 11-point autofocus system, Active D-Lighting system, 3D Color Matrix Metering II, a new Guide Mode, and an extensive Retouch Menu, enabling consumers to edit photos, even without a computer.
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D5000 Smart. Sharp. Simply Brilliant

The D5000 12MP DSLR Camera expands possibilities for photo and HD Video creativity with D-Movie mode, Vari-Angle LCD Monitor & 19 Automatic Scene Modes. It also incorporates a comprehensive set of in-camera editing features to make the most of captured images without the need of a computer.
Nikon, Inc. limited warranty included 2010 Nikon Inc.

D90

Engineered for Artistry

The D90 is the world's first digital SLR camera with a movie shooting function that delivers genuinely cinematic results, enhanced by the creatively shallow depth of field made possible by the DX-format sensor. This is further refined by the optical quality and broad selection of NIKKOR lenses - the same lenses relied upon by professional photographers the world over.
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Digital SLR's

Canon

NEW!

EOS DIGITAL REBEL T1i

The Journey Continues

In addition to an all-new 15.1 MP Canon CMOS sensor, DIGIC 4 Image Processor, a 3-inch Clear View LCD with anti-reflective and scratch-resistant coating, the EOS Rebel T1i adds remarkable Full HD video capture at resolutions up to 1920 x 1080. An HDMI port allows for quick connections to HDTVs and monitors for easy viewing of your stills and videos.

OLYMPUS

E-520

Full Featured and Ready to go Anywhere

The Olympus E-520 D-SLR incorporates a built-in image stabilizer to ensure blur-free shots irrespective of the lens attached. Shadow Adjustment Technology adjusts the exposure in the shadows while retaining all the detail in the bright areas and works automatically when using Face Detection Mode, Live View and in Scene-Select Modes. Matched with the Supersonic Wave Filter dust protection system and improved Live View capabilities, the freedom to frame and take great, crystal-clear photos is virtually limitless.

PENTAX

NEW!

K-x Kit

Redefining the Entry-Level DSLR

The Pentax K-x offers photographic performance that challenges higher dass DSLR models. It offers Live View and HD video, is available in white, black, as well as special, limited edition red and navy. The 12.4 megapixel CMOS image sensor features sensor-shift Shake Reduction for stabilized image and video capture up to 4 stops max. The K-x also features Face Detection AF, creative processing and filter modes, fast 4.7 FPS Capture speed and 1/6000 second maximum shutter speeds. .

TAMRON

AF18-270mm F/3.5-6.3 Di II VC (Vibration Compensation) LD Aspherical (IF) Macro

The Longest Steadiest Lens on Earth

The AF 18-270 covers an angle of view equivalent to that of a 28mm wideangle to a 419mm ultra telephoto with just one lens, letting the user capture once-in-the-lifetime images of panoramic landscape images or close-up pictures of children smiling, without having to get too close to the subject and without having to change lenses.

Camcorders

Canon

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DC420

Affordable, sleek and easy-to-operate

The Canon DC420 gives you the convenience of DVD technology, along with exclusive Canon 48x Advanced Zoom, a 1.07 Megapixel CCD, SD card image storage capability, Quick Start, now linked with the LCD panel, and Joystick Control. It is also compatible with lens-mounted Canon optical accessories to further enhance your creative choices.

FS300

NEW!

Fast, Flexible, Flash Memory

Adding to the usefulness of the Canon F300 flash memory camcorder is Quick Charge - which reduces the recharge time for the FS300's battery and Pre-Record which gives you a head start on capturing the action. With the FS300's Canon Exclusive features such as Canon 41x Advanced Zoom and DIGIC DV II Image Processor, combined with a 2.7" Widescreen LCD, Quick Charge and our new Dynamic IS - you've got a flash memory camcorder that's both hard to beat and unmistakably Canon.

Vixia HF R11

FULL HD 1080

NEW!

HD Dual Flash Memory Camcorder

With the Canon VIXIA HF R11 Dual Flash Memory Camcorder, you'll find that high definition video has hit new levels of convenience, ease, performance- and value. The VIXIA HF R11 has a 32GB internal flash drive, together with an SD memory card slot, Canon's Relay Recording and Smart Auto. A Genuine Canon 20x HD Video Lens and Dynamic IS works in combination with Canon's sophisticated HD image processing to deliver the sharp, vivid, lifelike video you want to see on your HDTV. Advanced Video Snapshot lets you create 2-, 4- or 8-second movie clips, with music, that are perfect for sharing.

Vixia HV40

FULL HD 1080

Shoot. Capture. See. Be HD.

The Canon VIXIA HV40 HDV Camcorder shares the core components found within the VIXIA line, but also offers a Genuine Canon 10x HD Video Lens and 2.96 Megapixel Full HD CMOS Image Sensor. It also allows consumers to record in native 24p Mode, a feature previously found only on Canon's professional camcorders. Native 24p allows consumer to capture and record 24 progressive frames per second to a HDV tape, a big advantage for the serious filmmaker.

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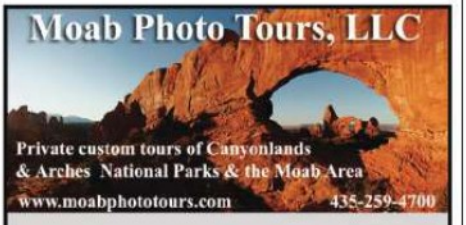

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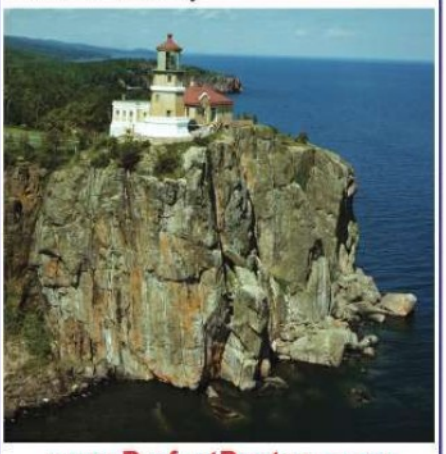
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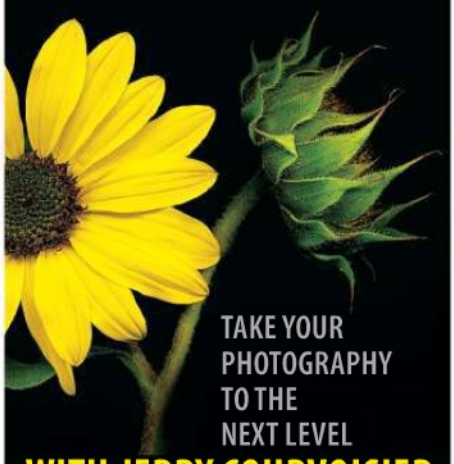

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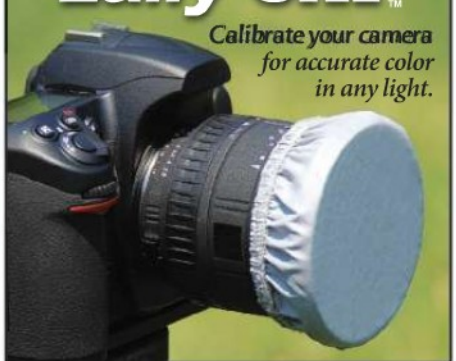

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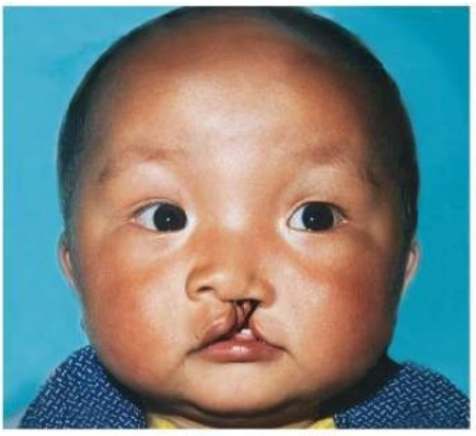
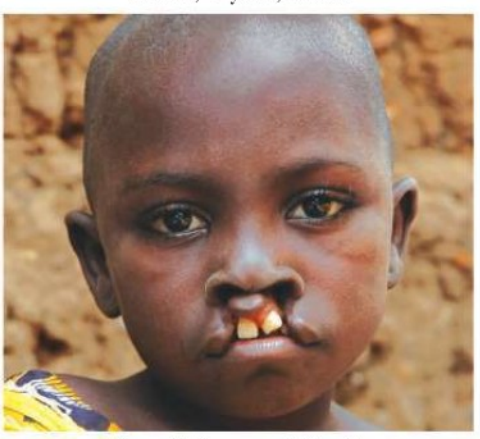


Ming, 6 months, China

Shiva, 1 year, India

Mot, 13 years, Cambodia

Durgap, 5 years, India



Funmi, 8 years, Nigeria

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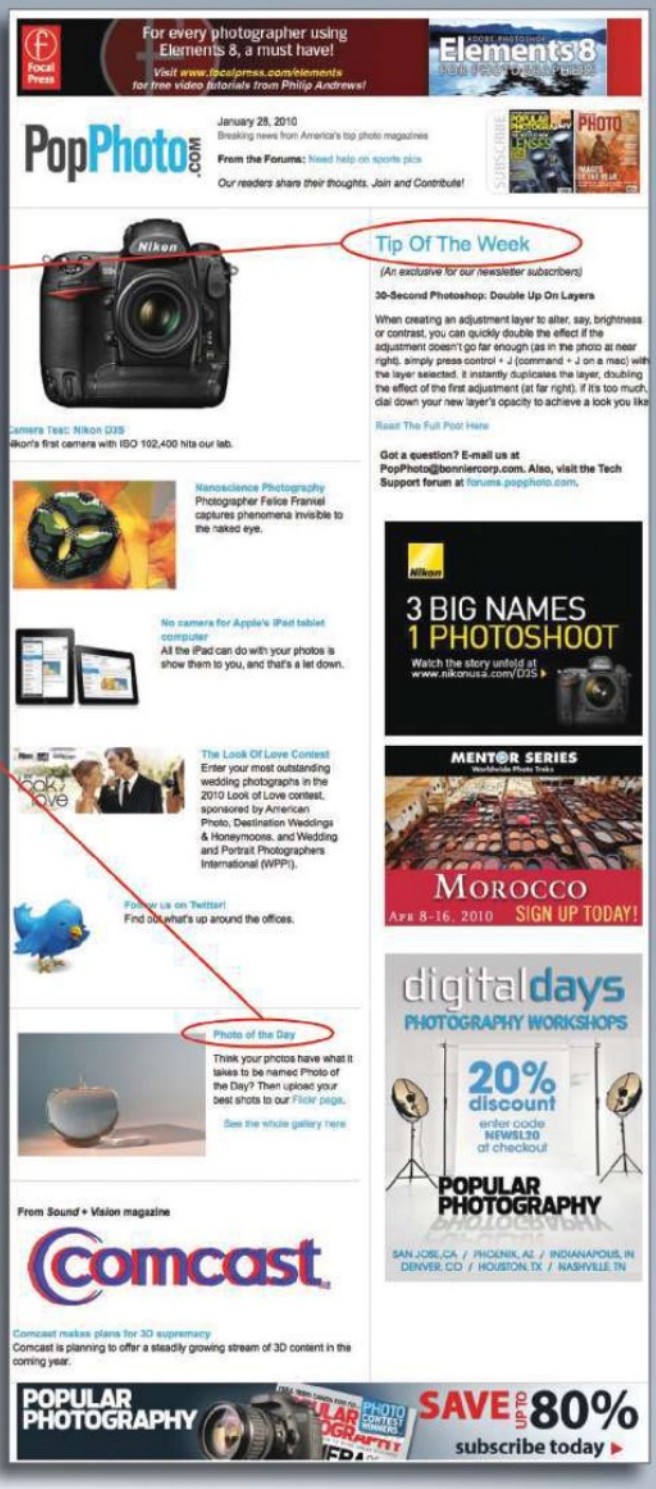
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24/1.8 EX-DG	479.00	479.00	479.00	479.00	479.00	—
28/1.8 EX-DG	379.00	379.00	379.00	379.00	379.00	—
30/1.4 EX-DC	439.00	439.00	439.00	439.00	439.00	439.00
50 1.4 EX DG HSM	499.00	499.00	499.00	499.00	499.00	499.00
50 2.8 EX DG Macro	299.00	299.00	299.00	299.00	299.00	—
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CONTINUED FROM PAGE 82

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4.0	96.0	94.7	91.8	85.7	78.0
5.6	96.0	94.8	91.9	86.0	78.8
8.0	96.0	94.8	91.9	86.0	78.7
11.0	96.0	94.7	91.8	85.8	78.4
16.0	95.6	94.1	90.8	84.1	75.7
22.0	95.5	94.1	90.8	84.1	75.7
32.0	95.3	94.1	90.7	84.0	75.6

24 MM

Size	5x7	8x10	11x14	16x20	20x24
2.8	95.9	94.6	91.6	85.3	77.4
4.0	96.2	95.0	92.2	86.6	79.7
5.6	96.2	95.1	92.3	86.7	79.8
8.0	96.1	95.0	92.1	86.4	79.2
11.0	96.0	94.8	91.8	85.8	78.3
16.0	95.5	94.2	90.9	84.1	75.6
22.0	95.6	94.2	91.0	84.2	75.8
32.0	95.6	94.2	90.9	84.2	75.7

50 MM

Size	5x7	8x10	11x14	16x20	20x24
2.8	96.2	95.1	92.3	86.9	80.2
4.0	96.6	95.5	93.0	88.1	82.0
5.6	96.8	95.8	93.6	89.2	83.9
8.0	97.2	96.3	94.3	90.7	86.4
11.0	97.1	96.2	94.1	90.3	85.7
16.0	96.3	95.1	92.5	87.4	81.2
22.0	96.2	95.1	92.5	87.4	81.1
32.0	96.0	95.1	92.5	87.3	81.1

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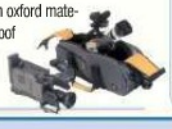

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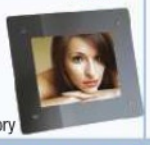

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Patent Pending.

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LAB * SOFTWARE

HDR PHOTOSTUDIO 2

CONTINUED FROM PAGE 84

much at first. Your monitor can't show the full range of tones in the file, so use the display brightness slider to inspect your image.

Once you begin editing, there are only three tools in which you'll spend most of your time: Veiling Glare, Brightness/Contrast, and Shadow/Highlight.

The first is the most useful. "Veiling glare" describes a hazy effect in which a scene's bright objects tend to reduce contrast in the image as a whole. Merge several images, and the effect gets magnified. But the Veiling Glare tool can dramatically reduce it. Use it to set the black point—making a realistic HDR image from there is a cinch.

Brightness/Contrast works as you'd expect, but Shadow/Highlight is unusual. You must first use the dropper to click on the tone you want to act as your midpoint, then adjust shadows and highlights relative to it.

What We Advise

The software provides file-type export options that can maintain all of the 32-bit data in a file.

Save out as the native BEF file, and you'll keep your data in perpetuity, ripe for re-editing in, we presume, a future of displays that show you all your image's color. Also consider the OpenEXR HDR format. Both file types have plug-ins available that will allow you to do some 32-bit image editing in Adobe Photoshop.

We highly recommend HDR PhotoStudio 2. Not only does it produce beautiful HDR images that look incredibly natural, it is also easy to learn. Without much reading of the manual, most users, especially those familiar with working in HDR, should be able to produce stunning results quickly. *—Debbie Grossman*

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- The 110 volt unit plugs into any standard household socket.
- It has a circular flash tube that is daylight balanced at 5600 K, a guide number of 90 at ISO 100 and a recycling time of 4 seconds. It also comes with a 60 watt modeling lamp.
- The Budget Studio Flash can be triggered through the camera with its 12' sync cord (included), by another flash being fired and activating the built-in photo slave or through its open-flash test button.
- Specs: 6-1/2" long, 3-1/2" diameter. Weighs only 15 ounces.

(LTBF) **$49.95**

- All the features of the Adorama Budget Studio Flash (on the Left) and has:
- More power GN 150 at iso 100
- User replaceable flash tube

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Also Available in Octagon shape (FPSSB80) $59.95

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Four leaf barndoors designed to direct light and prevent light spill or camera lens flare

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12"x12" (LTBSB12)	$19.95
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2 – Budget Studio Flashes
2 – 7" Light stands
1 – 33" White Umbrellas with Black Cover
1 – Deluxe carrying case

With 100 Flash **$199.95** *With 160 Flash* **$219.95**

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3 – 7" Light stands
2 – 33" White Umbrella with Black Cover
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1 – Snoot
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(LTACS) **$19.95**

AC Slave Flash

Guide number 90 at ISO 100.

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"C" Shaped Adjustable Bracket

with 2 Shoes & 2 Tripod Screws

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- 3 section telescopic tube extends to 26 1/2", retract to 12"and vertically
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3" Spring Clamp with 2" opening

Good for holding back-grounds, wires.

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Pro Clamp with Reversible Mounting Stud. 1/4 x 20 and 3/8 Screw Threads.

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Compares to Bogen 2900 Series

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MONOLIGHTS

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1220	252	2.6 Sec	5.25 lbs.	6v	$279.95
1820	282	3 Sec	5.75 lbs.	6v	$289.95
2420	320	4.5 Sec	6.20 lbs.	6v	$349.95

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Snoot
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with Weight Bag & Light Stand for Studio Lights

- Stronger design stand 6' high.
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125w	23.95	21.95ea.

Cool Light 1,

11" Reflector with One 30W Fluorescent Bulb, 150 Watt Equivalent.

- 11" reflector with hardware to plug in AC.and to mount an umbrella. Flicker-free noiseless operation.

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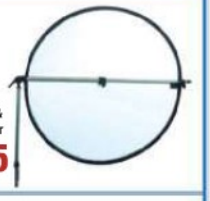

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BAG THE BLOOMS

CONTINUED FROM PAGE 58

Parry's Agave and Parry's Penstemon, Oliver Lee Memorial State Park, NM. Pentax 645 with 45–85mm f/4.5 Pentax lens and extension tube on tripod; 1/125 sec at f/8 on Fujichrome Velvia 50.

cent blooms (white, yellow, pink, orange). But don't forget about light and composition.

At high noon, you can capture saturated, glowing color by positioning the camera near frame-filling blossoms that are lit from behind (transilluminated). Because the sun is overhead, you'll need to find long-stemmed specimens or get yourself close to the ground.

A lenshood keeps the sun from striking the lens directly and causing flare. But you'll get dazzling starburst effects by including the sun partially blocked by a stem or leaf.

Go Wide at Close Range

An ultrawide-angle lens (less than 20mm or equivalent) used at point-blank range produces dramatic perspective results. The secret? Push the camera right into the patch of flowers, so close that petals bump against the front of the lens.

At this distance even the slightest change in camera angle causes a major change in composition. Get low and keep an eye to the viewfinder, or shoot using live view, to accurately monitor your creation.

For adequate magnification, you may need to use a short extension tube (10–12mm) between the camera and lens. A polarizing filter will darken the blue skies that show up in most wide-view backgrounds.

Contributing Editor Tim Fitzharris has been photographing the natural world for four decades. Among his many books is The Audubon Guide to Photographing America's National Parks. *Visit www.timfitzharris.com.*

6 TOP AMERICAN FLOWER SPOTS

PLAN YOUR VISIT FOR WHEN BLOOMS ARE AT THEIR PEAK.

FEBRUARY ANZA-BORREGO DESERT, CALIFORNIA Desert annuals set against sand dunes and mountains. For info: www.parks.ca.gov.

MARCH SOUTHERN ARIZONA Broad patches amid towering saguaros. For info: www.desertusa.com.

APRIL HILL COUNTRY, TEXAS Pleasant backroad driving to numerous locales. For info: www.lone-star.net/wildflowers/index.html.

MAY GREAT SMOKY MOUNTAINS, NORTH CAROLINA AND TENNESSEE Hundreds of species on the ground, plus blooming shrubs and trees. For info: www.nps.gov/grsm/index.html.

LATE JULY SAN JUAN MOUNTAINS, COLORADO Plentiful sub-alpine meadows set among mountains. For info: www.crestedbuttewildflowerfestival.com.

EARLY AUGUST MOUNT RAINIER, WASHINGTON Sub-alpine wildflowers with snow-capped volcano as background. For info: www.nps.gov/mora/index.html.

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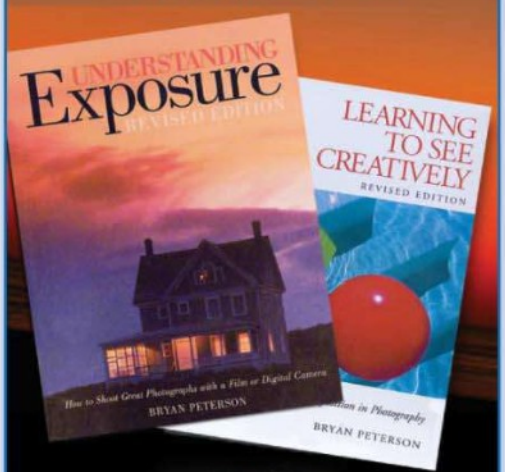

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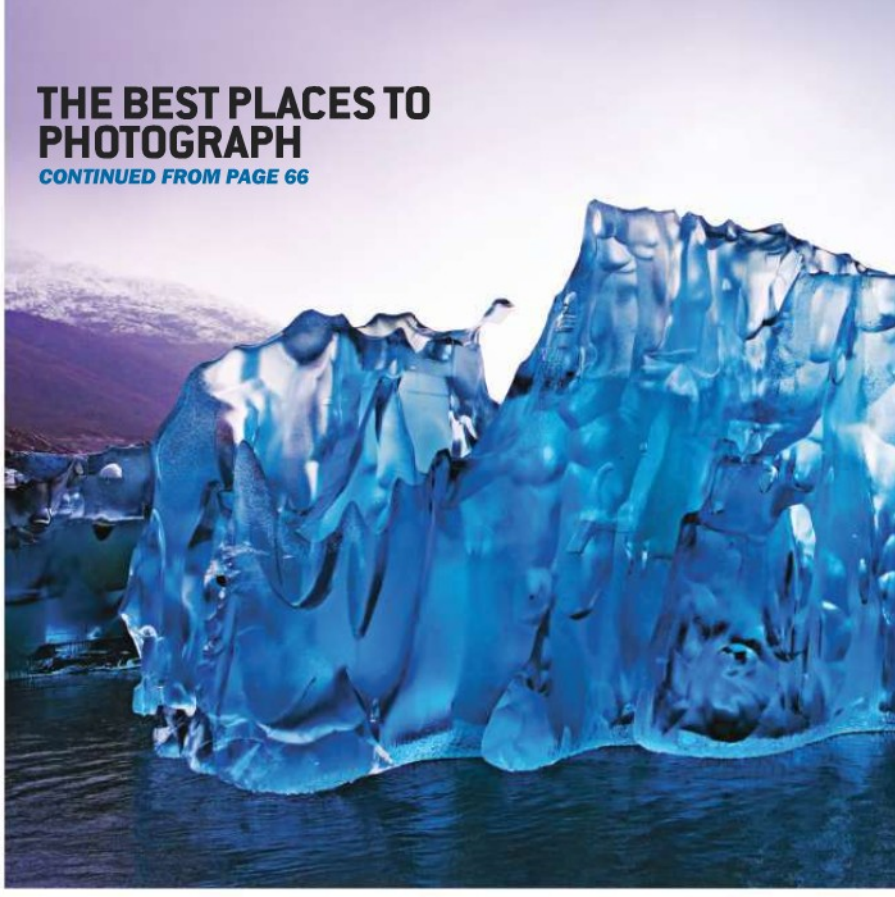
THE BEST PLACES TO PHOTOGRAPH

CONTINUED FROM PAGE 66



GREGORY ALLEN

Stockholm, Sweden

While it can serve as a base for exploring Sweden's natural wonders, the capital is a very compelling subject itself. "My favorite part is Gamla Stan, the old town," Jason Lindsey says. "I love the ancient buildings, the brick paths and stairs, the narrow and intimate streets, the great food, and the people. Around every corner, the old city provides inspiration."

- **Must-get shot:** The parliament reflected in the harbor at night.
- **For info:** www.visitsweden.com.

Washington's Olympic Peninsula

For Seattle-based Rob Casey, getting there is part of the fun: "Take any of Seattle's peninsula-bound ferries, which feel like an immediate escape from the ordinary."

You'll find the mountain peaks of Olympic National Park, wilderness rivers and coastline, and small logging towns. "Expect more cloudy or rainy days than sunny," says Casey. "Bring rain gear for yourself and your camera, plus a warm coat and hat."

Look for subjects at your feet: wet, colorfully saturated beach rocks and driftwood, or water droplets resting on glacier lilies.

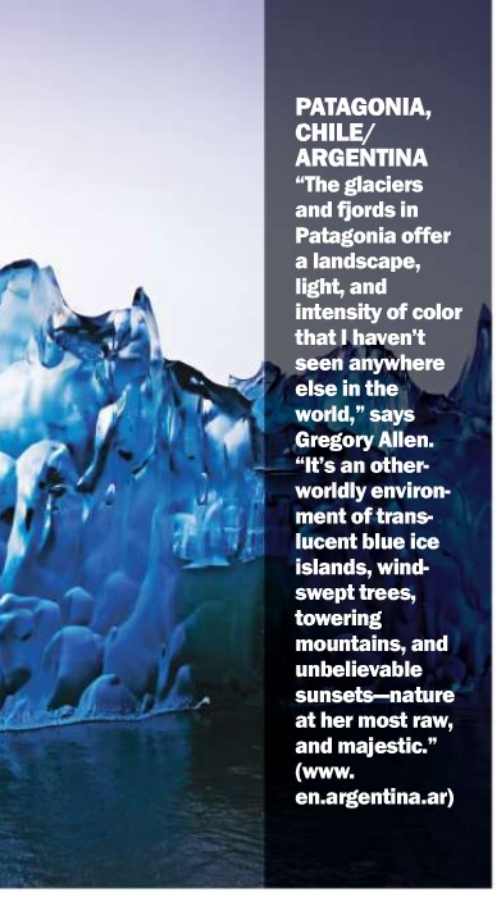
- **Must-get shots:** Tide pools, deserted beaches, rock formations.
- **For info:** olympicpeninsula.org.

Wyoming: Grand Teton Park

This national park is a gold mine for photographers: Snowcapped mountains, winding rivers, mirror lakes, and meadows of wildflowers that sometimes backdrop outdoor sports. Says Pam Voth, "There's beauty everywhere."

Moose, bear, and elk come close enough to roads that you can get satisfying shots with a 200mm or 400mm lens. "You'll often find photographers lined up at the Oxbow Bend of the Snake River, with a great reflection of the mountains in the water," she says.

- **Must-get shots:** Action such as skiing, snowboarding, fly-fishing, rafting, and rodeos.
- **For info:** www.nps.gov/grte.



PATAGONIA, CHILE/ ARGENTINA
"The glaciers and fjords in Patagonia offer a landscape, light, and intensity of color that I haven't seen anywhere else in the world," says Gregory Allen. "It's an otherworldly environment of translucent blue ice islands, windswept trees, towering mountains, and unbelievable sunsets—nature at her most raw, and majestic." (www.en.argentina.ar)

OUR EXPERTS

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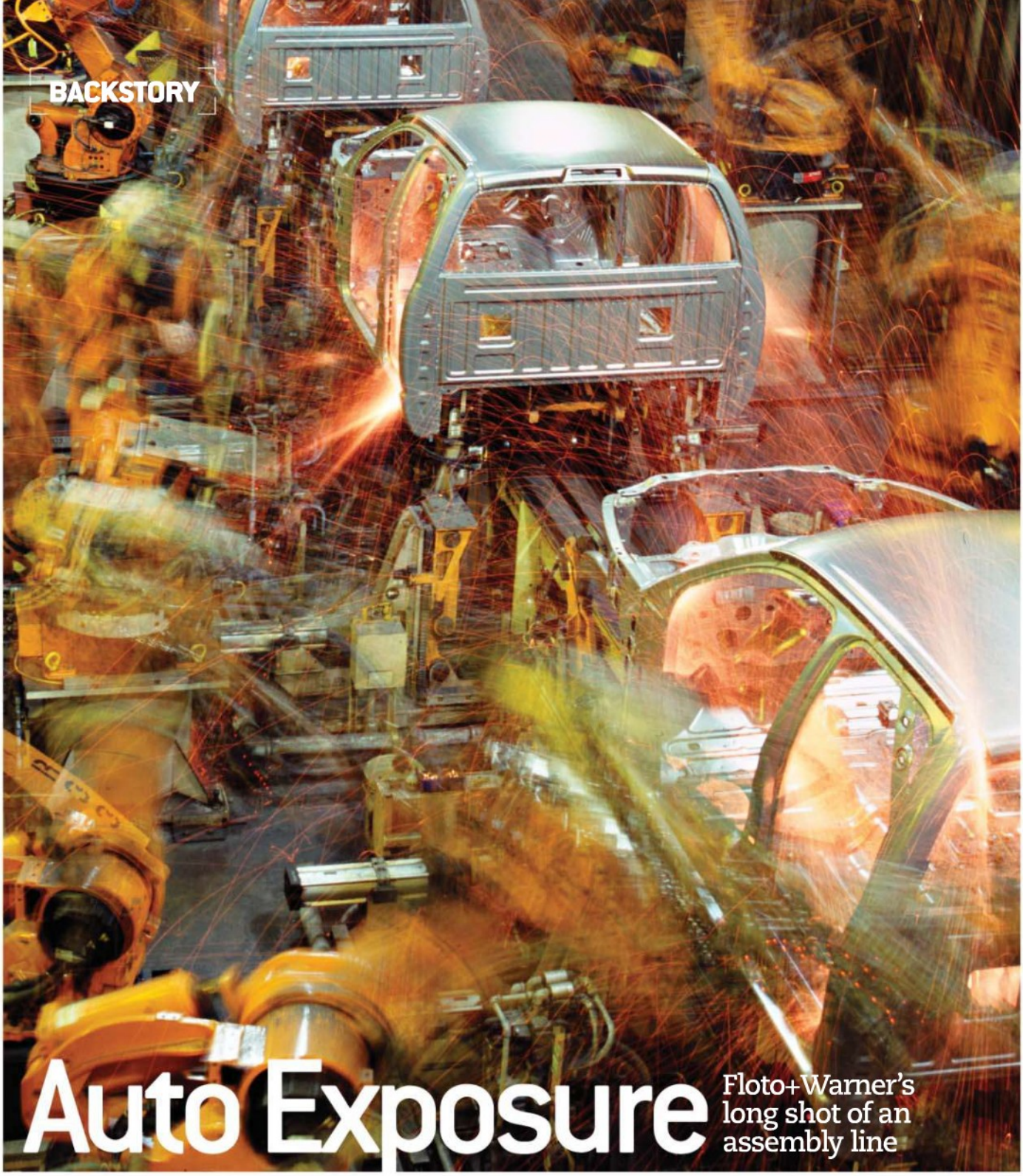

Auto Exposure

Floto+Warner's long shot of an assembly line

FLOTO+WARNER STUDIO, WWW.FLOTOWARNER.COM

WE HAD BEEN commissioned by *Condé Nast Portfolio* to photograph the Dodge factory in Detroit in 2007. It was the first time we'd been to a car factory, and we were thinking it would be very sterile. But it felt more Americana—antiquated, with guys smoking cigarettes on the line, and noise and sparks flying everywhere. We wanted to embrace the feeling of mayhem using a long exposure.

When the cars come down the line they move in very fast and then lock into a position. What you're seeing here isn't three cars—it's several cars that have stopped in three positions throughout a 30-second exposure. That's why the robotic arms are blurry, though the cars look stationary and in focus.

Partners Jeremy Floto and Cassandra Warner of Floto+Warner Studio together explain how they shot this car factory.

We shot from an elevated catwalk with our Toyo View VX125, Nikon 150mm lens, on Kodak Ektachrome E100G film, at f/22. We think it captures the crazy activity of the place.

—As told to Lori Fredrickson

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Photoshop was not used to place any elements in this image.
Learn more about flash photography at http://tombolphoto.com/blog
or www.photoquestadventures.com

Tom Bol on Elinchrom Ranger Battery Packs, Heads and Skyport.

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